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THE UNIVERSITIES OF THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND.

A HANDBOOK COMPILED BY THE UNIVERSITIES BUREAU OF THE BRITISH EMPIRE.

LONDON:
PUBLISHED BY HIS MAJESTY'S STATIONERY OFFICE.

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PREFATORY NOTE.

In the spring of 1918 the Council of National Defense of the United States of America invited the Universities of the United Kingdom to send delegates to visit American Universities in an endeavour to establish relations of co-operation and co-ordination. It was felt that the delegates would frequently be asked to supply information about the organisation and resources of the individual Universities of the United Kingdom, and the Universities Bureau of the British Empire compiled the present Handbook to enable them to meet such requests. The Board of Education have been glad to assist by undertaking the publication of the Handbook, but it will be understood that the responsibility for its contents rests with the Universities Bureau.

Office of Special Inquiries and Reports,
August 1918.

THE UNIVERSITIES OF THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND. — A HANDBOOK COMPILED BY THE UNIVERSITIES BUREAU OF THE BRITISH EMPIRE.

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THE UNIVERSITIES OF THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND. — A HANDBOOK COMPILED BY THE UNIVERSITIES BUREAU OF THE BRITISH EMPIRE.

INTRODUCTORY.

UNIVERSITIES were the outcome of the great intellectual revival which affected Europe in the twelfth and thirteenth centuries. Shortly after the Schools of Bologna and Paris had developed into what we now term universities, similar seats of learning arose at Oxford and Cambridge. The Universities of Scotland and the University of Dublin were founded in the fifteenth and sixteenth centuries. All others are products of the past hundred years.

Unlike those of other countries, the universities of the United Kingdom have been, since their origin, independent of State control. As autonomous institutions they have developed out of the universities of the Middle Ages, under the compulsion of internal forces, with very little influence from outside. The historical continuity of their evolution and their individual independence account for certain customs and usages in which they differ one from another and from universities in other lands. Their titles of degrees may be taken as an illustration. A university of the Middle Ages was a guild of learned men. Teaching was the craft of the guild, whose fellowship carried with it the right to teach. An admitted aspirant for fellowship was termed a bachelor. The members of the guild recognized his apprenticeship after submitting him to certain tests or, as we should term them, examinations. After gaining some experience in teaching, and successfully maintaining a thesis in public disputation, the bachelor attained to his degree. Admitted into the guild, with its *jus ubique docendi*, he was known indifferently as doctor, master, or professor. Still following this ancient usage, the degree in Scotland is the mastership, M.A. In Oxford, Cambridge, and Dublin, where the examination for the bachelorship grew to be the determining test, the mastership, which carries with it all the privileges of membership of the guild, or senate, follows without further examination after an interval of two or three years, but in no case less than six years from matriculation.

For convenience in standardizing the attainments of their alumni, modern universities have divided the degree into stages—usually described as the " first " and " higher " degrees—bachelorship, mastership, and doctorate.

Geographically, the universities of the United Kingdom fall into several groups. Some—*e.g.*, Oxford, Cambridge, St. Andrews, and the University College of Aberystwyth—are situate in country towns. It is difficult to exaggerate the attractions of Oxford and Cambridge as places of study and contemplation, or as fields for participation in all the games and exercises in which young men and young women seek recreation and the promotion of a healthy physical development. Others, such as the Universities of Birmingham, Bristol, Durham (Armstrong College, Newcastle), Leeds, Liverpool, London, Manchester, Sheffield, Glasgow, Belfast, Dublin, and the University College of South Wales, Cardiff, are in the centres of large manufacturing and industrial areas, which offer special opportunities of technical and commercial training and investigation.

At all the universities women are admitted to all courses of instruction, with some reservations as to courses in Engineering and as to attendance at classes in medical subjects, upon the same terms and under the same conditions as men. Except at Oxford and Cambridge, women are eligible for

all degrees, with the exception of degrees in Divinity in the Scottish Universities. At Oxford and Cambridge women are admitted to all examinations, but are not eligible for degrees.

The distinguishing characteristic of British universities, as compared with those of the Continent of Europe, has from the earliest days been the provision of halls of residence, or colleges, in which students live as members of a community, with the privileges of social intercourse and subject to the mutual influence which corporate life exerts. For his own college a student acquires the strongest sentiment of love and loyalty, with a countervailing rivalry of other colleges. Inter-collegiate contests have favoured the cultivation of athletics in all forms, and have resulted in the provision of grounds and club-houses for running, rowing, cricket, football, hockey, tennis, polo, and other games.

Admission as an undergraduate.—Before inserting a student's name *in matricula* all universities exact evidence that the applicant's intellectual equipment fits him to undertake a course of study for a degree. The matriculation examination covers the usual subjects of education in a secondary school, such as English Composition and Literature, Mathematics, English History, Greek, Latin, French, German, other foreign languages, Logic, Mechanics, Dynamics, Physics, Chemistry, Geography, Biology, Botany, Geology, Experimental Science, &c. Of these subjects the first two are compulsory at all universities; whereas a considerable latitude of choice is allowed in other subjects. At Cambridge and Oxford, Greek and Latin are compulsory; in Scotland and at the National University of Ireland, Greek or Latin; at the University of Dublin, Latin. At most other universities Latin is compulsory for students in Arts, and in some for students of Medicine. At Oxford and Cambridge, Sanskrit or Arabic may be substituted for Greek and Latin by natives of Asia or Africa not of European parentage; and in Scotland either of these languages, or any other approved classical language, may be substituted for Greek or Latin by students whose native language is other than European.

Graduates of "recognised" universities outside the United Kingdom who present evidence of adequate training and ability can obtain admission as Advanced Students. Since no list of other universities has as yet been generally adopted, it is necessary for intending students to ascertain from the university in which they desire to study (or from the Universities Bureau) whether the degrees which they hold will be accepted as the equivalents of a degree of a university of the United Kingdom. Advanced students are eligible for higher degrees after pursuing a prescribed course of study and research for two (or in some cases three) years and submitting an approved thesis.

The exact titles of these higher degrees is (April, 1918) under discussion. Oxford has adopted *philosophiæ doctor*. Certain other universities will probably adopt this title also, whilst others will award the mastership as the first research degree, leaving it open to the student to secure the doctorate after a further period devoted to research.

The academic year is divided into three terms, which run from about the 1st of October to the middle of December; the middle of January to the end of March; the middle of April to the end of the first week in July, respectively.

Fees are charged at all the universities of the United Kingdom. They vary for different courses, being higher for those which involve laboratory work than for those for which class teaching alone suffices. They vary also in some degree in the different universities. Particulars are given in the several sections for the benefit of those who desire to enter as undergraduate students. Fees, if any, charged to graduates, depend upon the character of the work undertaken. They can be ascertained on application to the several universities.

In all universities provision is made for study and research in every faculty; but in most universities greater prominence is given to certain subjects than to others, either because great teachers have established their reputation for proficiency in these subjects, or in accordance with the opportunities for studying their application which the area in which the universities are situate affords. The special departments to which prominence is given are noted in the accounts of the several universities.

Pamphlets describing the provision for advanced work and research made by the several universities and colleges may be obtained post free on application to the Universities Bureau.

The descriptions of the several universities contained in this Handbook relate to normal times. Figures as to the number of teachers and students are for the last normal session, 1913–14. No attempt has been made to state the uses to which university buildings have been put during the war, nor the tasks allotted to their staffs. Several have lent their main buildings, and almost all have lent their hostels, or some of them, for hospital purposes. Researches on matters connected with the war are being carried on in their laboratories, which in some cases are closed to students. All these adaptations are, as we trust, of temporary duration. In the Handbook the universities are described as they were before the war, and, as we hope, they soon will be again.

Fuller information, including all particulars as to their personnel, may be obtained from the Yearbook of the Universities of the Empire for 1916 and 1917, published by Herbert Jenkins, Ltd. (3, York Street, St. James's, S.W. 1.) for the Universities Bureau, Imperial Institute, London, S.W. 7, price 7*s.* 6*d.*

Inquiries regarding any matters connected with university education may be addressed to the Hon. Secretary of the Bureau.

UNIVERSITY OF ABERDEEN.

Founded under the authority of a Papal Bull, 1494–5; reconstituted under Acts of Parliament, 1858 and 1889.

Certain of the original buildings remain, the Chapel with its crowned tower (1500) being especially notable. The other buildings are modern, the latest 1912–13.

The city of Aberdeen is a seaport of bracing climate, engaged in extensive granite works, shipbuilding, the manufacture of woollen goods, fish curing, &c.

Library, Museums, etc.—The Library (1500) contains 200,000 vols. and 170 incunabula, some of which are unique; large funds are set aside for its maintenance. It is especially rich in Celtic literature and in books bearing on the history, topography, and antiquities of the Scottish Highlands. There are various departmental museums, the anthropological and surgical being the richest; amongst the departmental libraries is included a valuable collection of books and periodicals on Classical Archæology. The hospitals, asylum, and other medical institutions of the city and district afford ample opportunities for the clinical study of Medicine and Surgery in all departments.

Faculties.—Arts, Science, Divinity, Law, Medicine. The Chair of Medicine in its original form represents the most ancient foundation for instruction in Medicine in Great Britain.

Degrees and Diplomas.—M.A. (3 years), D.Phil., D.Litt.; B.Sc. (3 years), B.Sc. Agr. (3 years), B.Sc. Forestry (3 years), D.Sc.; B.D. (2 years), D.D.; B.L. (3 years), LL.B. (3 years), LL.D.; M.B., Ch.B. (5 years), M.D., Ch.M. Diplomas in Agriculture (2 years), in Public Health (1 year). Degrees in Commerce and in Education are about to be instituted. Attendance at other universities specially recognised by the University Court, and the examinations passed therein, are accepted to a certain extent and under certain conditions.

Students suitably qualified who are graduates of universities recognised by the University Court, or other persons showing sufficient qualifications, may be admitted to prosecute special study or research free of charge beyond the matriculation fee of 1 guinea.

Students who have passed certain similar examinations of the Universities of the United Kingdom, or in the British Dominions overseas, students who hold the B. ès L. or B. ès Sc., and others who hold certificates of maturity or grade similar to the French Baccalauréat, are excused the Preliminary Examination. Research students of special distinction may be made Research Fellows.

Bursaries and Scholarships.—The Faculty of Arts is rich in bursaries ranging in value from £10 to £30 per annum; there are also bursaries in the Faculties of Science, Medicine, and Divinity. Postgraduate Scholarships and Fellowships (£100 to £200) are available in Arts, Science, Divinity, and Medicine.

Facilities for Research.—Facilities for Research are afforded in well-equipped laboratories connected with the following departments:—Anatomy, Pathology, Bacteriology, Botany, Chemistry, Agricultural Chemistry, Pharmacology, Physics, Physiology, Public Health, Zoology.

Fees.—Matriculation, 1 guinea per annum. Inclusive fees for tuition: Ordinary M.A., 30 gs.; honours, 40 gs.; B.Sc. in Pure Science, 60 gs.; M.A. and B.Sc. taken together, 75 gs.; LL.B., 30 gs. (or 20 gs. to an M.A. of the University); B.L., 22 gs.; M.B., Ch.B., 90 gs.; M.A., M.B., Ch.B., 110 gs.; B.Sc., M.B. and Ch.B., 120 gs.; M.A., B.Sc., M.B., and Ch.B., 140 gs. (The total cost of the whole medical curriculum, including hospital fees, class, and matriculation, and degree fees, is usually about £160.) The degree fees vary from 5 and 6 gs. to 10 gs. for the Doctorates (Medical, 15 to 22 gs.). The fee for the Diploma in Public Health is 5 gs.

Residence.—There is no residential accommodation for students within the University. Good lodgings are to be had in Aberdeen.

Recreation and Athletics.—There are a number of athletic clubs available for students. The recreation grounds are at King's College, and there is a large gymnasium at Marischal College. The University Union Rooms at Marischal College are intended as a social centre for the students.

Number of Professors and other Teachers.—84.

Number of Students.—1,024 (328 women). Additional in summer, 45 (9 women).

Official Publications.—Calendar, published September, 3*s.* 10*d.*; Aberdeen University Review, 3 times a year, 3*s.* 6*d.* per annum.

Vice-Chancellor and Principal:—The Very Rev. Sir George Adam Smith, D.D., LL.D., Litt.D.

Secretary (to whom all inquiries should be addressed):—D. R. Thom, M.A.

UNIVERSITY OF BELFAST.

Constituted a university Oct. 31, 1909, on the dissolution of Queen's College, Belfast. Queen's College was incorporated Dec. 30, 1849, under Acts 8 & 9 Vict., cap. 66.

Belfast, situate on the Lagan at its junction with Belfast Lough, is a port of the first rank, connected with England and Scotland by several lines of steamers to Liverpool, Fleetwood, Heysham, Glasgow, etc. Apart from its vast shipbuilding industry, the city and its vicinity are centres for the manufacture of linen goods and machinery.

Library, Museums, etc.—The Library of the University contains 80,000 volumes. Museums of Natural History, Medicine, Materia Medica, Classical Archæology, and Sanitary Science. Laboratories: Chemistry (Donald

Currie), Engineering (Harland), Physics, Physiology (Jaffé), Pathology and Bacteriology (Musgrave), Anatomy, Pharmacy, Geology, Botany, and Zoology.

Faculties.—Arts (including Music), Science (including Agriculture and the School of Engineering), Law, Medicine, Commerce.

Degrees and Diplomas.—B.A. (3 years), M.A., D.Lit.; LL.B. (3 years), LL.D.; M.B., B.Ch., B.A.O. (Bachelor of Obstetrics) (5 years), M.D., M.Ch., M.A.O.; B.Sc. (3 years), B.Sc. in Agriculture (4 years), B.Sc. in Engineering (3 years), D.Sc.; B.Com. Sc. (3 years), M. Com. Sc. Diplomas in Public Health (9 months), Commerce (2 years), Education (1 or 2 years), Social Training (2 sessions).

All degrees and diplomas are unrestricted and open to all, and Scholarships are open.

Facilities for Research.—Facilities for Research, especially in Chemistry, Physics, Physiology, and Anatomy, are given in the various laboratories. Ample opportunities of clinical training are afforded in the hospitals of the city.

Fees.—Matriculation, 1 g.; annual enrolment fee, 1 g.; (total) examination fees for each degree vary from 3 to 7 gs. Degree fees from 2 to 10 gs.

Hall of Residence.—There is a hall of residence for women, the Riddel Hall (Warden).

Number of Professors and other Teachers.—66.

Number of Students.—685.

Official Publications.—Calendar, 3*s.*; Regulations of the Faculties, separately, free.

President and Vice-Chancellor:—Rev. T. Hamilton, M.A., D.D., LL.D.

Secretary (to whom inquiries should be addressed):—J. M. Finnegan, B.A., B.Sc.

UNIVERSITY OF BIRMINGHAM.

Birmingham, the "Capital of the Midlands," is situate on the edge of the great coal and iron district called "The Black Country" (Dudley, Wolverhampton, Walsall, etc.), but not far from the picturesque scenery of Warwickshire. Numerous industries, chiefly of iron goods, are carried on here, and it has the monopoly of the English screw trade. It manufactures boilers and engines, railway carriages, steel pens, small arms, cycles, motor-cars, tyres and accessories, galvanized iron ware, glass (especially table glass), jewellery, electro-plate, fancy leather goods. Much of the bronze and copper money of this and other countries is coined here. There are nine public parks and several free libraries. The city covers an area of 20 square miles. The Town Hall contains one of the finest organs in the world. The Industrial Hall has a valuable collection of Oriental metal work, Limoges enamel, English and foreign glass and Japanese ceramics, a remarkable collection of Wedgwood china, and a collection of arms, probably the most complete in existence. The collection of pictures in the Art Gallery is of great interest and value. A Municipal Technical School was established in 1893.

The Charter of the University prescribes instruction in all branches of a liberal education and the prosecution of original research; especially the provision of such instruction as may be of service in the manufactures, commerce, and industrial pursuits of the Midlands.

Library, Museums, etc.—The Library comprises about 72,000 volumes. Museums: Zoological, Geological, Anatomical, and Dental. The Chemical Laboratory has special organic, physical, electro-chemical, analytical, and public health departments. The Engineering, Mining, and Metallurgical Laboratories are exceptionally well-equipped. There are also a brewing laboratory and a power station which supplies the whole University with lighting, heat, and power. The Civil Engineering Laboratories include

testing machines of high capacity (one of 700,000 lbs.). A small observatory is attached to the department of Physics.

Faculties.—Science (including Human Anatomy and Anthropology, Engineering—Mechanical, Civil, Electrical; Metallurgy, Mining, Biology, and the Chemistry of Fermentation); Arts (including Modern Languages, Education and Music); Commerce; Medicine (including Hygiene and Public Health). There is also a School of Dentistry.

Degrees and Diplomas.—B.A. (3 years), M.A. (1 year), D.Litt. (6 or 7 years), D.Phil. (6 or 7 years), B.Mus. (3 years), M.Mus. (1 year); B.Sc. (3 years, in Applied Science 4 years), M.Sc. (1 year), D.Sc.; M.B. or Ch.B. (5 years), M.D., Ch.M., B.Sc. (Public Health) (9 months), M.Sc. (Public Health); B.D.S. (5 years), M.D.S.; B.Com. (3 years), M.Com. (1 year). Diplomas: Art Instructor's, Brewing (4 years), L.D.S. (4 years); Mining (Coal, Metal, or Petroleum, 3 years); Secondary Teachers' (1 year); Social Study (1 or 2 years); Graduates' Commerce (1 year), Public Health (9 months). M.A. in the Honour Schools (4 years).

A new degree, Doctor of Philosophy (D.Ph.), has been instituted to meet the needs of foreign students. It will be given after two years of research in the University, provided that candidates can show that they are sufficiently advanced to engage in a piece of research.

Facilities for Research.—Facilities for studying the following subjects are exceptionally ample:—(1) The courses in the Faculty of Commerce. (2) The courses in Applied Science, Chemistry, Physics, Engineering (Civil, Mechanical, and Electrical), Mining and Metallurgy. In all these scientific departments research is continually being carried on.

The University recognises courses of study attended at other universities. No list of such universities is published, but each application for recognition is considered on its merits.

Fees.—Matriculation, £2. Membership fee, 1½ gs. per annum; Composition fees for tuition range from 17 to 50 gs. p.a.; Examination fees, £2 to £6 (for Doctorates, £10); research fees in Science depend upon the amount of accommodation required in the laboratories, and may be put down at approximately £30 a session.

Halls of Residence.—There is no hall of residence for men, but students reside in lodgings, of which a list is kept in the University. The charge for board is from £2 upwards a week.

For women: University House, Edgbaston Park Road (Warden), on a site of 2¾ acres.

Recreation and Athletics.—There are excellent playing-fields in the grounds of the University for recreation, athletics, &c., and numerous students' societies, including those of the Guild of Undergraduates, which provide opportunities for social intercourse.

Number of Professors and other Teachers.—141.

Number of Students.—874.

Official Publications.—The Calendar, published October, 2s.; Regulations and Syllabuses for Degrees (in sections), published June, free.

Principal:—Sir Oliver Lodge D.Sc., LL.D., F.R.S.

Secretary (to whom inquiries should be addressed):—G. H. Morley, M.Com.

UNIVERSITY OF BRISTOL.

Bristol, which is situate on the Avon, with its docks upon the Bristol Channel, has been an important seaport from Saxon times, and, until the eighteenth century, was the second city in the Kingdom. It has a large oversea trade with Canada, the United States, the West Indies, South America, France, Spain, and Portugal, and is the seat of the Imperial Tobacco

Co., and the chief emporium of tobacco in the country. It is the headquarters of the British and Colonial Aeroplane Co., and a principal seat also of the cocoa and chocolate manufacture. Other chief trades: shipbuilding, rope, pipes, glass, leather, chemicals, paper bags, brewing, soap, sawmills, iron founding, etc.

There are extensive docks in the city itself, at Portishead (6 miles) and at Avonmouth (5 miles) owned by the city; the last-named of large size and including locks and floating dock capable of holding the largest vessels afloat.

The residential parts of the city are on high ground, and include Clifton, with its famous suspension bridge.

The climate is mild and equable; snow is rare. The district is hilly and varied, both as regards conformation and geological character, and is rich in fine cathedrals and medieval remains.

The main University buildings, partly in course of erection, will eventually cover a site of 13 acres nearly in the heart of the city, on high ground immediately adjoining Clifton and other residential districts. The Municipal Museum and Art Gallery adjoin. The Faculty of Engineering is carried on in the Merchant Venturers' College near College Green. Buildings already erected include a Hall, general and Medical libraries, lecture rooms and class rooms in all faculties, and laboratories in the various departments of Science and Medicine. A large extension (estimated to cost £250,000) has been temporarily stopped by the war. Other extensions are projected, including a large residential college for men students.

Occupied by the University also are the following buildings at a short distance:—Clifton Hill House (hall of residence for women students), on the crest of Clifton Hill; Tutorial Houses for men and for women students in training; three residential houses for women students in training as teachers; Edgecumbe Hall, occupied by men students in training; Canynge Hall, for men students in training (closed during the war).

Hospitals available for clinical study:—Bristol Royal Infirmary, 350 beds; Bristol General Hospital, 284 beds; Royal Hospital for Sick Children and Women, 108 beds; Bristol Eye Hospital, 40 beds. Total number of beds, 782.

Faculties.—Arts (including Oriental languages and certain theological subjects); Science (including Agriculture); Medicine (including Dental Surgery and Public Health); Engineering (Civil, Mechanical, Electrical, and Automobile).

Degrees.—B.A. (3 years); M.A., D.Litt.; B.Sc. (3 years, with honours 4 years, including 1 year spent mainly in research), M.Sc., D.Sc.; M.B., Ch.B. (5½ years), Ch.M. (2 years after Ch.B.), M.D., B.D.S. (5 years), M.D.S.; in Engineering, B.Sc. (3 years), M.Sc., D.Sc. The B.A., B.Sc., and B.Sc. in Engineering can be taken by research. All higher degrees, except Ch.M., are attainable by research.

Diplomas.—Education (postgraduate, 1 year); L.D.S. (4 years); D.P.H. (9 months). Certificate in Engineering (3 years). Testamurs: in Social Study (2 years), in Journalism (3 years), for Engineering apprentices (2 years).

Studies and examinations in any other university may be accepted by Senate in lieu of equivalent studies and examinations in the University, provided that the candidate pursue two years' university study in Bristol before graduation; or in the Faculty of Medicine three years, two being subsequent to examination in Anatomy and Physiology.

Degrees of Bachelor, or of Bachelor with honours, in any university may be accepted by Senate in lieu of the same degrees of Bristol as qualifications to proceed to higher degrees in the faculty concerned.

A degree of Master in any university may be accepted by the Senate in lieu of the same degree of Bristol as a qualification for proceeding to the degree of Doctor, except in the Faculty of Medicine.

Postgraduate scholarships are open to all. City scholarships and bursaries are open only to citizens of Bristol or their children.

Facilities for Research.—The laboratories in all the Scientific, Medical, and Engineering subjects are equipped for purposes of research. There is an Agricultural and Horticultural station at Long Ashton, with experimental fruit plantations and orchards of 17½ acres, devoted to research in fruit culture and allied subjects (*e.g.*, cider-making) and plant diseases and their treatment: its laboratories are available to graduates for research

The expenses of research are largely defrayed by the University Colston Society, established in connection with the University.

Fees.—Matriculation fee, 2 gs. (including examination). B.A. tuition fee, 18 gs. per annum, examination fee, 7 gs.; B.Sc., 20 gs. and 7 gs.; B.Sc. in Engineering, 25 gs. and 7 gs.; M.B., B.Ch., including hospital practice, 30 gs. and 18 gs.; B.D.S., including mechanical laboratory and hospital practice, 41 gs. and 18 gs. Testamur in Social Study, 5½ gs.; in Journalism, 4 gs. M.A. and M.Sc. examination fee, 5 gs.

Halls of Residence.—For men: Edgecumbe Hall, £45 per annum. For women: Clifton Hill House, from 43 gs. per annum. For women students training as teachers: Priory House, Elton House, Belgrave House.

Recreation and Athletics.—The athletic ground of 12 acres is at Coombe Dingle, near Bristol.

The social life of the students centres in the Guild of Undergraduates, a body established by Ordinance of the University with representation on the University Court. There are numerous students' societies.

Number of Professors and other Teachers.—Professors, 26 (who form the Senate); Readers, 2; Lecturers in charge of departments, 22; other Lecturers, Demonstrators, and Recognised Teachers, 172.

Number of Students.—Day, 895 (including 241 women); evening, 713.

Official Publications.—The Calendar, published August, 1s.; Prospectuses of all Faculties and special courses (not contained in Calendar), July, free.

Vice-Chancellor:—Sir Isambard Owen, D.C.L., LL.D., M.D.

Registrar (to whom inquiries should be addressed):—James Rafter, M.A.

UNIVERSITY OF CAMBRIDGE.

The University of Cambridge may be said to have originated in the twelfth century, and it is almost certain that before the beginning of the thirteenth century it was a recognised centre of study, although it was not until 1318 that it received from Pope John XXII. formal recognition as a *Studium Generale* or *Universitas.*

The 17 Colleges, which are corporate bodies distinct from the corporate body of the University although in intimate relation with it, were founded in the following order:—Peterhouse or St. Peter's College (1284); Clare College (1326); Pembroke College (1347); Gonville and Caius College (1348); Trinity Hall (1350); Corpus Christi College (1352); King's College (1441); Queens' College (1448); St. Catharine's College (1473); Jesus College (1496); Christ's College (1505); St. John's College (1511); Magdalene College (1542); Trinity College (1546); Emmanuel College (1584); Sidney Sussex College (1596); Downing College (1800). There is also one Public Hostel, Selwyn College, founded in 1882, and since 1869 Non-Collegiate students have been admitted to the University.

A College, like an American "Dormitory," consists of buildings containing sets of rooms for students, but it also, like a mediæval monastery, possesses its chapel, library, dining-hall and kitchens. Each college is governed by its Master and Fellows, who constitute the teaching and administrative staff. The corporate life of seniors and juniors, living in the same buildings and dining in the same Hall, is an important feature of education in a residential university.

The relation of the University to the Colleges has some analogy to that of the Federal Government of the United States to the States composing the Union, as control is divided, the University examining for and conferring degrees, while the direction of the studies of individuals, and to a large extent the teaching itself, is in the hands of the Colleges. The most important exception to this is the teaching of Natural Science, which, owing to its concentration in laboratories, is mainly controlled by the University. As nearly all the members of the University belong to the Colleges and all the members of the Colleges belong to the University, the same persons in different capacities manage the business of the Colleges and that of the University, and so the good understanding, without which divided control is a failure, is easily maintained.

Residence.—Anyone who desires to become an undergraduate member of the University must first be admitted either as a member of a College or Hostel, or as a Non-Collegiate student. He is required, as a rule, to reside for 3 years before being admitted to a degree, although in the case of Research students (*see* below) and students from certain institutions affiliated to the University two years' residence is sufficient. The number of students in residence in 1914—the last academical year before the war—was 3,676.

Expenses.—The fees payable to the University are: For matriculation, £5; for examinations, about £6 15*s.* (in ordinary cases); for the B.A. or LL.B. degree, £3; University capitation tax, 5 gs. a year. The fees payable to the Colleges are:—Tuition fee, about 20 gs. per annum; establishment charge, about 10 gs. per annum; College capitation tax, about £3 15*s.* per annum. College degree fee, £2. But as the charges made by the different Colleges vary in form and distribution, though not much in total amount, these figures are only given as a general guide to the student and not as a precise scale of fees. To this must be added the cost of board and lodging, which varies greatly according to the means and tastes of individual students, although it need not be more expensive in Cambridge than elsewhere; expenses for books, clothes, and travelling; laboratory fees and additional lecture fees in the case of students of Engineering, Natural Science, and Medicine; subscriptions to clubs and societies; and, in the case of students from distant countries, the cost of maintenance during the vacations.

It will be seen that the variable factors in the problem are too numerous and important for any reliable estimate of total expenses to be made, although full materials for making such an estimate in any individual case are given in the "Student's Handbook" (*see* below). Moreover, the cost of education in particular cases may be much reduced by the assistance afforded by the Scholarships and Exhibitions referred to in the next paragraph.

Scholarships, Exhibitions, Studentships, and Prizes.—It is the practice of the Colleges to provide out of their endowments a certain number of Entrance Scholarships and Exhibitions for students of promise who have not yet begun residence at the University but are intending to do so at the beginning of the next academical year. These range in value from £30 to £80 a year, and are awarded by means of a special Entrance Scholarship Examination. In addition to these a large number of the Scholarships and Exhibitions attached to a College are given to its resident members in recognition of success in the College and University Examinations. These vary in value from £30 to £100 a year or more. There are also a number of postgraduate Studentships of the value of £100, £150, or £200 a year assigned to the encouragement and endowment of research. Prizes are awarded by the Colleges, either on the result of examinations or for special essays or dissertations.

The University has its own Scholarships, Studentships, and Prizes, open to competition among all its members. A full account of these, and of the corresponding College endowments, will be found in the "Student's Handbook."

Public Buildings and Institutions.—The more important of these are the following:—(1) The University Church; (2) the Senate House; (3) the University Library, contains over 800,000 volumes, including many early-printed books, as well as about 10,000 MSS. and 100,000 maps; it is entitled under the Copyright Act to a copy of every book published in the United Kingdom, and a large number of foreign books and periodicals are acquired by purchase. Each college also has its own library, and some of these are rich in MSS.; (4) the Fitzwilliam Museum contains a large collection of paintings, drawings, engravings, Egyptian and Greek antiquities, ceramics, coins, watches, illuminated MSS., autographs, early printed books, music, and books relating to the arts; (5) the Museum of Classical Archæology contains a collection of casts illustrating the history of Greek sculpture from the earliest times, and an archæological library; (6) the Science Museums and Laboratories supply facilities for study and research in Agriculture, Biochemistry, Botany, Chemistry, Engineering, Ethnology, Experimental Physics, Forestry, Geology, Human Anatomy, Medicine and Surgery, Mineralogy, Physiology, Psychology, and Zoology and Comparative Anatomy. The Philosophical Library maintains a special relation with all the Scientific Departments and is very rich in journals and scientific transactions; (7) Addenbrooke's Hospital; (8) the Cambridge Observatory; (9) the Solar Physics Observatory; (10) the Selwyn Divinity School; (11) the Squire Law Library; (12) the University Lecture Rooms and Departmental Libraries (English, History, Modern and Medieval Languages, Moral Sciences, and Oriental Languages); (13) the Examination Hall.

University and College Teaching.—There are 51 University Professorships, 15 Readerships, 62 University Lectureships, and a large number of University Demonstratorships and College Lectureships.

Honours Courses.—In addition to the Pass Examinations there are now 13 triposes or Examinations for Honours. They were founded in the following order:—1. Mathematics; 2. Classics; 3. Moral Sciences; 4. Natural Sciences; 5. Theology; 6. Law; 7. History; 8. Oriental Languages; 9. Modern and Medieval Languages; 10. Mechanical Sciences; 11. Economics; 12. Anthropology; 13. English.

Research Courses.—The establishment of courses of Research has made it possible for students who have already graduated in other universities, at home or abroad, or who are able to give some other evidence of special qualification, to proceed to the B.A. or LL.B. degree under different conditions to those applicable to ordinary undergraduates, and after only two years' residence. Such students do not take examinations, but qualify for a degree by means of a dissertation. A scheme is under consideration for admitting such students to a higher degree in place of the B.A. degree. As Cambridge is within an hour and a quarter's journey from London, it is easy for research students in residence to use the facilities offered by the British Museum Reading Room, the Public Record Office, the London Library, the Natural History Museum at South Kensington, and other institutions, as well as those provided in Cambridge for literary and scientific research. Full information about the facilities for research in Cambridge can be obtained from Dr. J. N. Keynes, the Registrary of the University.

Medical Courses.—The degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (B.Ch.) are obtained by pursuing medical study for a specified time within and outside the University, and passing certain medical examinations.

Higher Degrees.—Students who have taken the B.A. degree can proceed after three years to the higher degree of Master of Arts (M.A.) without further examination. The other higher degrees are Bachelor of Divinity (B.D.) and Doctor of Divinity (D.D.); Master of Laws (LL.M.) and Doctor of Laws (LL.D.); Doctor of Medicine (M.D.) and Master of Surgery (M.Ch.); Bachelor

of Music (Mus.B.), Master of Music (Mus.M.), and Doctor of Music (Mus.D.); Doctor in Science (Sc.D.) and Doctor in Letters (Litt.D.). These two last degrees are conferred in respect of the candidate's printed contributions to the advancement of Science or Learning, and the same general principle is now applied also to the higher degrees in Divinity, Law, and Music.

Diplomas.—The University grants eight Diplomas:—1. Agriculture; 2. Anthropology; 3. Forestry; 4. Geography; 5. Mining Engineering; 6. Psychological Medicine; 7. Public Health; 8. Tropical Medicine and Hygiene. Of these, 1, 6, 7, and 8 are open to candidates who are not members of the University. There is also an examination in Architectural Studies on the results of which a certificate may be granted.

Special organisations also exist for preparing candidates (1) for Holy Orders, in connection with which there are two Theological Colleges for graduates—Ridley Hall and Westcott House; (2) for the Civil Service, including the Home Civil Service as well as the Services of India, Egypt, and the Sudan, and for Consular appointments in the Levant, China, Japan, and Siam; (3) for the profession of Teaching, by means of the Training College for Schoolmasters, and the course for the Certificate in the Theory, History, and Practice of Education associated with it.

Clubs and Societies.—There are many clubs and societies in the University, not only for all forms of athletics, but also for social and educational purposes. Of these last the most important are the Philosophical Society, founded in 1819, and the Antiquarian Society, founded in 1840. There is also a Philological Society (1872), a Theological Society (1901), and a Classical Society (1903). The Union Debating Society was founded by the Union of three other Societies in 1815.

Privileges on account of War Service.—Both the University and the Colleges have made special provision for those whose course of study has been interrupted or deferred by War Service. The Council of the Senate are empowered to excuse the Previous Examination or the Special Examination in Military Subjects to students who have been engaged for not less than six months on service connected with the present war, or during a period of not less than six months have been prisoners of war or have been detained by the King's enemies, although they may not before their period of service have joined the University. Such students may also be allowed as many as four terms out of the nine required to be kept, if military service for a period covering four terms or more is properly certified. Research or Affiliated Students, who are required to keep only six terms, will not in ordinary circumstances be allowed more than two terms. By military service is understood serving in the Navy or Army of any of the Allied Powers; also work done for the health or well-being of the Allied Forces in a hospital, ambulance, or other organization recognized by, and under the control of, the military authorities. Special cases connected with the war not covered by the foregoing description, as for instance, wounded or disabled men who are invalided after a short period of service, will be separately considered. Such students may also obtain permission to enter for Tripos Examinations later than they would be entitled to do in ordinary circumstances.

The Colleges have taken special powers under which (1) Candidates for Entrance Scholarships who are over age at the end of the War may be allowed to compete if they were prevented by military service from competing at the ordinary time; and (2) Scholars and Exhibitioners elect may be allowed to postpone residence if called away by military service.

Women Students.—Women students from Girton and Newnham Colleges are admitted to University examinations. The fees paid by students of these two Colleges vary from £90 to £105 a year.

Official Publications.—The following publications, issued by the University Press, supply additional information about the University:—1. The Statutes of the University, as approved by the King in Council; 2. The Ordinances

of the University, regulations made by the Senate, by the authority conferred on it by the Statutes; 3. The Compendium of University Regulations, an abstract of the Ordinances, prepared by the Registrary for the use of students; 4. The Endowments of the University, an historical account of trust funds and bequests; 5. The Historical Register, an account of the University, with lists and records of Honours to the year 1910; 6. The University Calendar, published annually, containing a record of the proceedings of the University for the current academical year, and continuing after 1910 the lists in the Historical Register; 7. The Student's Handbook to the University and Colleges of Cambridge, published annually, giving full information to intending students on all subjects on which they would be likely to require it.

These books can be obtained through any bookseller, or from the Cambridge University Press, Fetter Lane, London, E.C.4, and 100, Prince's Street, Edinburgh; or from the agents of the Press in New York, Bombay, Calcutta, Madras, Toronto, and Tokyo.

Chancellor :—Lord Rayleigh, O.M., M.A., Hon. Sc.D., Trinity College.

Vice-Chancellor (1917–18) :—A. E. Shipley, Sc.D., Master of Christ's College.

Registrary :—J. N. Keynes, Sc.D., to whom applications for information and other correspondence should be addressed at the Registry of the University, Trumpington Street, Cambridge.

Students wishing to enter a College should make application as follows : *Christ's*, the Master (Dr. A. E. Shipley); *Clare*, the Senior Tutor (Mr. J. R. Wardale); *Corpus Christi*, the Tutor (Mr. W. Spens); *Downing*, the Tutor (Mr. J. H. Widdicombe); *Emmanuel*, the Master (Dr. P. Giles); *Gonville and Caius*, the Senior Tutor (Mr. W. B. Hardy); *Jesus*, the Master (Mr. A. Gray); *King's*, the Tutor (Dr. J. H. Clapham); Magdalene, the Master (Dr. A. C. Benson); *Pembroke*, the Master (Mr. W. S. Hadley); *Peterhouse*, the Tutor, (Mr. H. J. Edwards); *Queen's*, the Senior Tutor (Dr. A. Wright); *St. Catharine's*, the Senior Tutor (Mr. A. W. Spratt); *St. John's*, the Master (Mr. R. **F.** Scott); *Sidney Sussex*, the Master (Rev. G. A. Weekes); *Trinity*, the Senior Tutor (Mr. R. V. Laurence); *Trinity Hall*, the Tutor (Mr. G. B. Shirres). Applications for admission to *Selwyn College* should be made to the Master (Rev. Dr. Murray); and as a Non-Collegiate Student, to the Censor (Mr. W. F. Reddaway), Fitzwilliam Hall.

UNIVERSITY OF DUBLIN, TRINITY COLLEGE.

Trinity College, though described in the original Elizabethan Charter as " the mother of a University," has remained the sole College, and thus " Dublin University " and " Trinity College, Dublin," are in practice interchangeable terms.

The College occupies a large site in the middle of the city, with ample grounds for the athletic clubs, and has residential accommodation for about 270 students. At Trinity Hall (acquired by the University in 1908) there is residential accommodation for about 40 women students. A new hostel has been opened by the General Synod of the Church of Ireland for the accommodation of Divinity students of that Church. There are also registered lodging-houses. It is compulsory for all students of the College to reside in them if they do not reside in chambers within the College, or with their guardians in Dublin.

The various College societies (of which the well-known " Historical " with its illustrious roll, including Edmund Burke, is the oldest), and the athletic clubs, form a prominent feature in the life of the College.

The Library.—The Library of Trinity College has enjoyed since 1801 the privilege (shared by the British Museum, the Bodleian, the Cambridge University, the Edinburgh Advocates' Libraries, and the National Library of Wales) of receiving a copy of every book published in England. It contains

333,110 volumes and 2,077 MSS. A catalogue of MSS. was published by the Librarian in 1900.

The Astronomical Observatory of Trinity College is at Dunsink, 5 miles from the College. It is the official residence of the Royal Astronomer of Ireland.

Museums, &c.—Formerly equipment for Science teaching was inadequate, but now, thanks to the Science Laboratory Fund contributed by the graduates and friends of the University during the years 1903–06 and to Lord Iveagh's generosity, the College has good modern equipment for teaching and for research work.

The Botanic Gardens are about a mile from the College and are about 8 acres in extent. The General Herbarium is particularly rich in the plants of North America, India, South Africa, and Australia. The new School of Botany was built and equipped through the munificence of Viscount Iveagh (who also provided for the construction and equipment of the Physical Laboratory).

Admission.—A student who has passed two years in Art studies at certain overseas Universities, and passed the examinations belonging to that period is given credit for the first academic year, provided that if the course he has pursued does not include all the subjects of the first year of Dublin University, the Senior Lecturer may require him to qualify by examination in the omitted subjects.

South African students are granted special concessions.

Degrees, Diplomas, &c.—B.A., M.A., Litt.D.; B.D., D.D.; LL.B., LL.D.; M.B., M.D., B.Ch., M.Ch.; Sc.B., Sc.D.; B.A.O. (Obstetrics), M.A.O.; Agri. B., Agri. (Forest.) B.; B.Dent.Sc., M.Dent.Sc.; B.A.I. (Engineering), M.A.I.; Mus.B., Mus.D.; Diplomas in Medicine, Surgery, Obstetric Science, Public Health, Education, Electrical Engineering, Economic and Commercial Knowledge, Agriculture and Forestry; Licences in Engineering and in Dental Science; Certificate in Education; Testimonium in Divinity.

Distinctive features of the University are, firstly, that every student who wishes to obtain a Professional degree has also to obtain an Arts degree, and, secondly, that there are compulsory subjects in the Pass B.A. course.

The Honour B.A.—known as a *Moderatorship*—can be taken in ten different groups (viz., 1. Mathematics; 2. Classics; 3. Mental and Moral Philosophy; 4. Experimental Science; 5. Natural Science; 6. Historical and Political Science; 7. Modern Literature; 8. Legal and Political Science; 9. Engineering Science; 10. Celtic). The Special Honour course lasts four years in the case of Nos. 1, 2, 4, 5, 6, 7, 9, three years in Nos. 3 and 10, and two years in No. 8. Honour candidates are also required to pass the examinations for Pass candidates, with the exception of the Pass B.A. Examination.

A B.A. of three years' standing may be admitted M.A. There is no examination for this, nor is a thesis required.

Facilities for Research.—On the literary side, Trinity College offers unique opportunities for research in the older philology and literature of Ireland and Wales. The collection of MSS. in the College Library includes many of the most important monuments of the old Irish language, such as the Book of Leinster, the Yellow Book of Lecan, and many other vellums of almost equal importance. These volumes contain the incunabula of much of the oldest literature, both secular and ecclesiastical, and no other library is so rich in legal and medical MSS. in the Irish tongue. There is, besides, a great wealth of modern Irish MSS. of the seventeenth and eighteenth centuries second only to the vast collection of the Royal Irish Academy, which is easily accessible to students of Trinity College. Besides these MSS. which are Irish both in origin and in language the Library of Trinity College possesses a series of Latin MSS., written by Irish scribes, such as the Book of Moling, dating from the end of the seventh century, the Books of Dimma and of Durrow (seventh or eighth century), the Book of Armagh (about 800), and the famous Book of Kells, of about the

same date, with others more recent. These, with other Latin-Irish codices of equal antiquity in the Royal Irish Academy, offer an unrivalled field for the study of Irish palæography.

There are also very special facilities for research in Irish history. The city has been for seven centuries the seat of a Government and the domicile of its archives. For students desirous of working at Irish history, political, economic, and ecclesiastical, the capital of Ireland is the natural centre, for great masses of records, national and local, of which only a portion has been published, are available in its many libraries such as the Record Office, Trinity College, the Royal Irish Academy, the National Library, Marsh's and the Franciscans' Library, which two latter are especially rich in ecclesiastical records. In addition, Dublin offers the fullest opportunities for the study of early Irish history with its laws and institutions.

There is a good collection of Greek papyri, especially of the third and second centuries B.C. in the College Library, and special instruction in Papyrology can be given.

Oriental Studies.—There is a good Oriental library in Trinity College and, in addition, research or "graduate" students would be allowed to consult the extensive library of the Professor of Arabic, Persian, and Hindustani.

Experimental Science.—Provision is made for research in the recently erected Iveagh Laboratories. There is also a valuable departmental library. Electrical and Mechanical Engineering are also provided for.

Chemistry.—The Chemical Laboratories of Trinity College are large, and are well equipped for the teaching of elementary and advanced inorganic and organic Chemistry, and for research work in these subjects. Special facilities can be offered for research work on problems connected with the distillation of mixtures, also for determinations of the densities, vapour pressures, and critical constants of pure substances.

Botany.—The School of Botany, Trinity College, Dublin, contains laboratories furnished with modern requirements. Special provision is made for research workers and postgraduate students, and the research rooms are well fitted with modern apparatus. As occasion requires, new instruments are purchased and apparatus is acquired for special investigations. A departmental library, containing the most important English and foreign Journals and standard books, is accessible to workers, who also may make use of the Herbarium, which comprises many important collections of plants, and of the College Botanic Garden. This latter is about six acres in extent and contains a valuable collection of native and exotic plants cultivated partly in the open and partly in a series of glass-houses, and offers important opportunities for research.

Zoology.—For research in pure Zoology the proximity of Dublin to sea, mountain, and moorland, offers many facilities, and the Department is well equipped with high-class microscopes and microtomes.

Geology.—Facilities for research are provided in the Iveagh Geological Laboratories, which possess a good and continually increasing equipment of modern instruments. Connected with these laboratories there is a library of standard geological literature and a University Museum containing valuable palæontological, meteorological, and mineralogical collections.

Medical School.—The hospitals of Dublin, including the well known Rotunda Hospital, both general and special, draw patients from the greater part of Ireland and afford excellent opportunities for the study of medical and surgical cases, and for "graduate" study in Orthopædics, Laryngology, Otology, and Dermatology, as well as in Obstetrics and in Gynæcology, in which subjects the University of Dublin grants a postgraduate diploma. The work for this diploma is done partly at the Rotunda Hospital and partly in the School of Physic of the University.

The Department of Anatomy offers special facilities for the study of Surgical and Medical Anatomy and also for Embryological work.

Physiology.—This laboratory offers facilities for various investigations, and during the last few years a number of researches have been carried out, among which may be mentioned those on creatine.

Pathology.—This laboratory offers facilities for research in Morbid Histology and Bacteriology. It is connected with several of the Dublin Hospitals and material can be obtained from them for work in clinical Pathology. The hospital authorities are willing to give opportunities for the study of cases in connection with such work.

Grants are made for apparatus, &c. for research work.

Number of Professors and other Teachers.—100.

Number of Students.—Undergraduates, 1,006; graduates, 279.

Official Publications.—Calendar, Vol. I., published about July, gives information as to Courses in Arts and Professional Schools and Pass Arts Examination Papers. Price, 2*s.* (Longmans, Green & Co., London, New York, and Bombay). Book of Trinity College, Dublin, 1591–1891. Price, 21*s.* (Hodges, Figgis & Co., Dublin).

Provost :—J. P. Mahaffy, D.D., Mus.D., C.V.O., G.B.E.

Registrar (to whom all inquiries should be addressed) :—E. P. Culverwell, M.A.

UNIVERSITY OF DURHAM.

The University of Durham was established by Act of Parliament in 1832. It was reconstructed under the University of Durham Act, 1908, in two divisions: the Durham Division, comprising the Durham Colleges, and the Newcastle Division, consisting of the College of Medicine and Armstrong College, Newcastle-on-Tyne. The former of these, the College of Medicine, had been taken into connection with the University in 1852, and the latter, Armstrong College, was founded in 1871 as the Durham College of Physical Science.

Durham is an ancient episcopal city, built on a rocky hill nearly surrounded by the River Wear. The cathedral (begun in 1093) contains the tomb of the Venerable Bede. The Castle, probably built in the reign of William I., is appropriated to the use of the University.

Newcastle, 14 miles to the north of Durham, is a port of the first rank, contiguous with one of the largest coalfields in England. For over 10 miles both banks of the Tyne are lined with quays, shipping yards, and factories. Its chief industries are shipbuilding, manufacture of locomotives and marine engines, ordnance, tools, firebricks, hemp and wire ropes, cables, anchors, sails

Library, Museums, &c.—At Durham the library contains 37,000 vols., and includes Theological and Patristic books of great rarity and interest. The Museum has a nearly complete collection of British birds and a fine collection of Roman antiquities from Binchester. There is an Observatory containing various instruments, including an Almucantar; the most recent telescope is mounted on a new suspension principle.

At the College of Medicine there are Museums of Pathology, Anatomy, Materia Medica, and Hygiene; the library at the Royal Victoria Infirmary contains 6,000 vols., other hospitals are the Maternity (1,000 cases per annum), the City Hospital for Infectious Diseases, the Newcastle Dental, and the Northumberland County Asylum.

At Armstrong College there is a temporary library containing about 22,000 vols., and the laboratories afford opportunities of research, especially in Engineering and Hydraulics and in various special branches of Chemistry, Physics, and Agriculture. The Marine Laboratory at Cullercoats is connected

with the College, which also administers the Northumberland County Farm, near Morpeth, and, on behalf of the Crown, the Chopwell Woods in the County of Durham.

Faculties.—Theology, Arts, Law, Medicine, Science, Letters, Music, Commerce. The Faculty of Theology is situate entirely in the Durham Colleges, that of Medicine entirely in the College of Medicine. The Faculty of Arts is shared between the Durham Colleges and Armstrong College. The teaching of Science is given entirely at Armstrong College, which has also departments of Fine Arts and Handicrafts. Science includes Agriculture, Engineering (Mechanical, Marine, Civil, and Electrical), Naval Architecture, Mining, Metallurgy, as well as Pure Science.

Degrees, Diplomas, &c.—B.A. (3 years), M.A., M.Litt., D.Litt.; B.D. (2 years), D.D.; B.C.L. (after B.A.), D.C.L.; M.B., B.S. (5 years), M.D., M.S., B.Hy. (Medical degree and 1 year's study), D.Hy.; B.Sc. (3 years), M.Sc., D.Sc.; B.Mus., D.Mus.; B.Com. (3 years), M.Com. Diplomas:—Theology, Foreign Languages, Psychiatry, Public Health, Theory and Practice of Teaching. Licences in Theology (2 years) and Dental Surgery (3 years). Honours are awarded for B.A. and B.Sc.; also for various Medical Examinations.

Degrees and Diplomas open to Colonial and Foreign Students.—The status of Advanced Student has been established for those specially qualified, who will be allowed to proceed to Doctorates on certain conditions after a period of not less than two years.

Scholarships.—There are a variety of entrance scholarships and exhibitions ranging in value from £20 to £70 per annum, tenable at the Durham Colleges or at the College of Medicine or at Armstrong College as the case may be, some on the foundation of the University, and some established either by scientific institutions or by private benefactors. There are also an indefinite number of Newcastle Corporation Exhibitions, covering the amount of the fees and tenable at Armstrong College. There are also Fellowships tenable some at Durham and some at Newcastle.

At Durham Theology has always been a special subject, and there is a flourishing Divinity School.

Facilities for Scientific Research are afforded at Newcastle, and there is a special department for Agriculture.

Fees.—Total examination fees for degree examinations: Bachelorship, £4 10s. to £25; Mastership, £1 10s. to £5; Doctorate, £5 or 10 gs.; Degree fees, £3 to £10; Diplomas and Licences, £1 to £3; tuition—at Durham, £7 a term; College of Medicine, M.B., B.S., 80 gs., composition fee for 5 years; L.D.S., 40 gs.; other medical diplomas, 12 to 25 gs. Armstrong College: composition fees for whole degree course, £60 to £77; composition fees for whole diploma course, £35 to £77; laboratory fees from £5 to 10 gs. a session; matriculation, 30*s.*; research fees determined as occasion arises.

Residence.—University College (Master), in the Castle, Durham, £100 (inclusive of Tuition and Examination Fees). Hatfield Hall (Principal); St. Chad's Hall, for students in Theology or Arts, but mainly for candidates training for Holy Orders who are of limited means; St. John's Hall (Principal), for students in Theology or Arts—each £80 a year inclusive. Women's Hostel (Principal), fees £16 a term in addition to the Tuition and Examination Fees—all at Durham. There is also a Women's Hostel at Newcastle, connected with Armstrong College.

Recreation and Athletics.—Union Society (with a branch at Newcastle), boat club, cricket and football clubs, musical societies, &c. At Durham, membership of all these is included in the terminal fees stated above. At Newcastle there is a special composition fee covering admission to all undergraduate clubs and societies.

Number of Professors and other Teachers.—Durham Colleges, 21; Armstrong College, 84; College of Medicine, 46.

Number of Students.—Durham Colleges (degree), 230 (20 women); College of Medicine, 220 (13 women); Armstrong College, 511 (evening 917).

Official Publications.—Durham University Calendar, October, 1*s.* 6*d.*; Durham University Journal, twice a term, 6*d.*; Calendar of the College of Medicine, August, free; Armstrong College Calendar, September, 1*s.* 5*d.*

Vice-Chancellor of the University :—J. S. G. Pemberton, M.A., D.C.L.

Registrar of the University (to whom inquiries should be addressed) :—H. G. Theodosius, M.A. (University Offices, 38, North Bailey, Durham).

President of the Council of the Durham Colleges :—J. S. G. Pemberton, M.A., D.C.L.

Secretary (to whom inquiries should be addressed) :—Rev. S. R. P. Moulsdale, M.A., B.D.

President of the College of Medicine :—David Drummond, M.D., D.C.L.

Secretary (to whom inquiries should be addressed) :—R. Howden, M.A., D.Sc.

Principal of Armstrong College :—Sir W. Henry Hadow, M.A., D.Mus.

Secretary to the Council (to whom inquiries should be addressed) :—F. H. Pruen, M.A.

UNIVERSITY OF EDINBURGH.

Originally "the Town's College," founded in 1583 by the Town Council of Edinburgh under general powers granted by the Charter of King James VI., dated 14th April 1582. Its constitution is now mainly determined by the Universities Acts of 1858 and 1889.

The old building on the site of "Kirk o' Field," the scene of the murder of Lord Darnley, was designed by Robert Adam in 1788 and completed in 1828. New buildings were begun in 1878. The M'Ewan Hall (1888–97), in theatre form, holds 2,600 people and has a great electric organ. It is used for academic ceremonials and other functions.

Among many objects of historical interest in a picturesque city are the Castle (seventh century), Calton Hill, St. Giles's Cathedral (1110), the Scott Monument, National Gallery, and Holyrood Palace, the Law Courts, the Advocates' and Signet Libraries, Arthur's Seat and Salisbury Crags, and in the neighbourhood are the Forth Bridge and the Pentland Hills.

Library, Museums, etc.—The Library, founded in 1580, contains over 270,000 vols. and 8,000 MSS., among them valuable works on Sanskrit literature and Persian and Arabic MSS. There are also various departmental libraries.

Museums are attached to the following departments :—Natural Philosophy, Fine Art, Geology, Natural History, Chemistry, Forestry, Agricultural Entomology and Forest Zoology (including the Waterhouse collection of Coleoptera), Anatomy (founded with the Monro collection in 1800, now containing several thousand specimens, especially of the Cetacea and human crania from all parts of the world), Physiology, Materia Medica (one of the most complete collections of medicinal and food substances in Scotland, including the Duncan and Christison collections), Forensic Medicine, Practice of Physic, Surgery, Obstetrics (including the Simpson collection), and Music and Musical Instruments.

The Professor of Botany is the Regius Keeper of the Royal Botanic Garden. The University owns the farm of Fairslacks, near West Linton, for use in animal breeding, and has a table at the Millport Marine Station.

The Medical School has been famous for many generations. The Royal Infirmary adjoining the University, provides over 900 beds for clinical teaching, in addition to the Royal Hospital for Sick Children, Maternity Hospital, Royal Edinburgh Asylum, and the City Fever Hospital. Over 50 resident posts in these hospitals are given annually to medical graduates. Ample provision

also exists for instruction in Engineering, Agriculture, Forestry, and Veterinary Science.

Faculties.—Arts (including in addition to the usual academic subjects, Sanskrit and Comparative Philology, Hebrew and Semitic Languages, Arabic and Celtic, Constitutional Law and History, Fine Art and Education); Science (including Astronomy, Agriculture and Rural Economy and Forestry); Divinity; Law; Medicine (including Public Health, Bacteriology, and Tuberculosis); Music.

Degrees, Diplomas, &c.—M.A. (3 years), B.E. (2 years), B.Com. (3 years), D.Phil., D.Litt.; B.Sc. (3 years) in Pure Science and in Applied Science (Engineering, Public Health, Agriculture, Forestry, and (4 years) Veterinary Science), D.Sc. in Pure Science and in Applied Science (Engineering, Veterinary Science and Public Health); B.D. (3 years); B.L. (3 years), LL.B. (3 years); M.B., Ch.B. (5 years), M.D., Ch.M.; Mus.B., Mus.D. Diplomas in Education, Tropical Medicine and Hygiene (D.T.M. and H.), and in Psychiatry (Dipl. Psych.). Certificate in Diseases of Tropical Climates. The following Honorary Degrees are given :—D.D., LL.D., Mus.D.

Scholarships.—The total annual value is £21,485. With a few exceptions the bursaries and scholarships are open to colonial and foreign students.

Facilities for Research.—The following laboratories are especially well-equipped for research :—Physics, Chemistry, Royal Botanic Gardens, Psychology, Anatomy and Anthropology, Physiology, John Usher Institute of Public Health, Materia Medica, Pathology, Bacteriology, the Engineering Laboratory for Strength of Materials and Hydraulics, and the Heriot-Watt College for graduates in Electrical Engineering.

Fees.—Matriculation fee, 1 g. p.a. Inclusive tuition fees for degrees: M.A., 30 gs., Hons., 40 gs.; for combined degrees in Arts and Science, Arts and Law, 45 to 75 gs.; LL.B., 30 gs.; B.L., 22 gs.; B.Sc. in Pure Science, in Engineering (Civil, Mechanical, or Electrical), in Agriculture, or in Forestry, 60 gs.; B.Sc. in Agriculture and B.Sc. in Forestry combined, 90 gs. Graduation Examinations :—M.A., 5 gs.; B.Sc., 6 gs.; D.Sc., 10 gs.; B.D. 5 gs.; LL.B., 6 gs.; B.L., 5 gs.; M.B., Ch.B., 22 gs.; M.D., 15 gs.; Mus.B., 10 gs.; Mus.D., 15 gs.

Halls of Residence.—For men: University Hall, consisting of Ramsay Lodge and Blackie House, on a self-governing basis (information from Messrs. Whitson and Methuen, 21, Rutland Street). For women: three hostels at Craigmillar Park, Newington (terms on application to the Principal Warden); Masson Hall, 31 and 32, George Square (Warden); and Muir Hall, 12, George Square (Lady Superintendent), £12 to £15 10*s.* a term.

Recreation and Athletics.—University field at Craiglockhart, athletic club with sections for all games, University Union, Women Students' Union, numerous student societies.

Number of Professors and other Teachers.—About 200.

Number of Students.—2,529 (546 women).

Official Publications.—The Calendar, August, 3*s.* 6*d.*; the Preliminary and Degree Examination Papers for the preceding year, May and July, 7*d.* to 1*s.* 5*d.* a set (James Thin, 55, South Bridge). The Students' Handbook issued by the Students' Representative Council.

Vice-Chancellor and Principal :—Sir J. Alfred Ewing, K.C.B., M.A., LL.D.

Secretary of Senate (to whom inquiries should be addressed) :—Professor Sir Ludovic Grant, Bart., LL.D.

UNIVERSITY OF GLASGOW.

The University was founded by a Papal Bull in 1451 and reconstituted by a Charter of King James VI. of Scotland in 1577.

The new buildings, designed by Sir Gilbert Scott, occupy an open and commanding situation on the crest of a hill to the west of the city.

Queen Margaret College, a large building standing in its own grounds, has been set apart for the teaching of women students.

There is a large and varied library in all departments, and a very valuable Hunterian Museum containing important collections of MSS. and early printed books, anatomical preparations, zoological and mineralogical specimens, coins, paintings, relics, &c., bequeathed by Dr. William Hunter (died 1793).

All the usual subjects in the Faculties of Arts, Science, Medicine, Law, and Theology are taught. Special Lectureships have also recently been established in such subjects as Arabic, Hellenistic Greek, Roman History, Celtic, Italian, and Russian.

As Glasgow stands at the centre of the mining, shipbuilding, engineering, and industrial area of Scotland, it offers unique opportunities for technical training.

Facilities for Research.—Facilities for postgraduate research in science are provided in the laboratories of Physics, Chemistry, Botany, Zoology, Geology, as well as in all the departments relating to Medicine and Public Health. There are also in the University special departments for the study of Naval Architecture and of Mining, in addition to a large and well-equipped Engineering department. A special School exists for the study of economic and social questions, and practical training is provided in connexion with it for social workers.

Fees.—For ordinary degree courses the inclusive Class fees in Arts amount to 30 gs. (ordinary degree) and to 40 gs. (Honours degree); in Pure and Applied Science, 60 gs.; in Law, 22 gs. to 30 gs.; in Medicine, the fees amount to about £120 to £130. Degree Fees, payable in instalments: Arts, 5 gs.; Science, or Law, 6 gs.; Medicine, 22 gs.

Research students are required to matriculate and to pay a fee sufficient to cover the ordinary expenses of their research work.

Residence.—In Glasgow there are no residential colleges, but excellent board and lodging can easily be procured in the immediate neighbourhood of the University. In addition there is a hostel for Divinity students, and also Students' Settlements for social workers. Women students are received in a residential hall, and in a hostel in connexion with the Student Christian Movement. Under ordinary conditions the cost of board and lodging would be from £1 to 30s. a week, all inclusive.

Recreation and Athletics.—There is a gymnasium attached to the University, and a large recreation field in the neighbourhood. The University Officers' Training Corps has its headquarters within the University. There are separate unions or clubs for men and women students where meals can be procured.

Number of Professors and other Teachers.—158.

Number of Students.—2,916 (including 662 women).

Official Publications.—The Calendar, July, 3s. 6d.; pamphlets giving the details of arrangements in the separate departments from the Registrar, The University, Glasgow.

Vice-Chancellor and Principal:—Sir Donald MacAlister, K.C.B., M.D.

Secretary of Senate:—Professor George Milligan, D.D. (who also acts as foreign correspondent).

The Royal Technical College.

(Affiliated to the University of Glasgow.)

The Royal Technical College contains departments providing qualifying courses for degrees of the University in Applied Science; Chemistry, including Technical Chemistry; Engineering (Civil, Electrical, Mechanical, Mining);

Economic Geology; Mathematics; Mechanics; Metallurgy; Natural Philosophy. There are also departments of Architecture and Building, Naval Architecture, Navigation, Biology, Bacteriology, Textile Manufacture, History and Theory of Music.

The College building, comprising over 7 acres of floor space, has cost, with equipment, about £400,000. The laboratories are fully equipped with apparatus of the most modern type, specially designed for demonstrations and research. They include rooms provided with machinery and appliances for large-scale experiments and operations associated with the manufacture of chemicals, the economical consumption of fuels, production of sugar, bleaching and dyeing of materials, treatment of ores, melting and casting of metals and alloys, metallographical examination, and assaying. The Textile Department contains over 50 looms designed for the production of all kinds of fabrics.

The library contains upwards of 20,000 volumes, and there are in addition certain valuable collections of books on the History of Chemistry, Music, &c.

The course for the Associateship of the College extends over four years; for the Diploma four years is required in Chemistry and Metallurgy, three years in other departments.

Inclusive fee for a course qualifying for graduation in Applied Science, 60 gs.

Number of Professors and other Teachers in the Faculty of Applied Science.—41.

Number of Students.—Day, 669; evening, 4,342.

Director:—H F. Stockdale, F.R.S.E.

THE NATIONAL UNIVERSITY OF IRELAND.

The Irish Universities Act, 1908 (8 Edw. VII., Ch. 38), which received Royal Assent on August 1st, 1908, dissolved the Royal University of Ireland and established two new Universities in Ireland. One of these, the National University of Ireland, was subsequently incorporated by Royal Charter, dated December 2nd, 1908, and came into full working order as from October 31st, 1909. Under its Charter the University has as its Constituent Colleges:—University College, Dublin; University College, Cork; and University College, Galway. There is also the recognised College, St. Patrick's College, Maynooth.

The University buildings will be erected in Upper Mount Street and Lower Fitzwilliam Street, Dublin, where a site has been purchased, but the work of building has to remain over, owing to the war.

With the exception of the Professorship of Catholic Theology, founded and endowed by the Roman Catholic Archbishops and Bishops of Ireland, the University, for the present, has no teaching staff apart from its Colleges.

Faculties.—1. Arts; 2. Philosophy and Sociology; 3. Celtic Studies; 4. Science; 5. Law; 6. Medicine; 7. Engineering and Architecture; 8. Commerce. Agriculture is included in Science; Music in Arts and Celtic Studies; Public Health in Medicine.

Classes are held in all these Faculties at each of the three Constituent Colleges, with the exception of Galway, at which for the present no provision is made for Music. In St. Patrick's College, Maynooth, classes are held in Arts, Philosophy and Sociology, Celtic Studies, and Science.

Degrees, Diplomas, etc.—B.A., B.Mus., M.A., D.Litt., D.Mus., D.Phil., D.Litt. Celt.; B.Sc., B.Agr.Sc., M.Sc., M.Agr.Sc., D.Sc.; LL.B., LL.D.; M.B., B.Ch., B.A.O. (Obstetrics), B.Sc. Public Health, M.Ch., M.A.O., M.D., D.Sc. Public Health, B.D.S., M.D.S.; B.E., B.Arch., M.E., M.Arch.; B.Comm., M.Comm. Diplomas in the subjects of Faculties 1, 3, and 8, and in Public Health, Tropical Diseases, Mental Diseases, Veterinary Hygiene, Agriculture,

Music, Applied Science, Education, Architecture, and Journalism. Certificates in Commercial subjects.

In order to obtain a Primary Degree in any faculty a student must have pursued after Matriculation in one of the Constituent Colleges, or in the recognised College, an approved course of study for at least nine terms in the prescribed subjects and must have passed in these subjects at the First University Examination and at the Degree Examination.

The University may grant the M.Sc., M.Agr.Sc., D.Sc., B.Sc. Public Health, M.E., M.Arch., or M. Comm. to graduates of other universities, or to students, whether matriculated students of the University or non-matriculated students, who, without having previously been admitted to the Primary Degree in any Faculty in the University, shall have carried on under prescribed conditions independent research in the University or in a constituent College. The duration of the course of research shall extend over at least three terms for a Master's Degree, and over at least six terms for a Doctor's Degree. These conditions shall apply retrospectively to candidates recommended by a Professor to a Faculty.

Graduates of Universities of the United Kingdom and of such other Universities as may be approved by the General Board of Studies and the Senate from time to time, shall be eligible to proceed to the Higher Diploma in Education Examination after attendance at the course prescribed for that Diploma in a Constituent College.

Graduates of Canadian Universities are admitted *ad eundem gradum* in order to permit them to proceed to Higher Degrees.

Fees.—Matriculation, £1; combined examination and degree fees, £3 to £12; diplomas, £2 to £5.

Official Publications.—The Calendar, 2*s.* (by post, 2*s.* 5*d.*), and pamphlets ["Regulations and Courses"] for each year, free on application to the Registrar.

Vice-Chancellor :—Sir Bertram C. A. Windle, M.A., M.D., D.Sc, LL.D., F.R.S.

Registrar :—Sir Joseph M'Grath, LL.D., 49, Merrion Square, Dublin.

University College, Dublin.

This College is the largest of the three Constituent Colleges of the National University of Ireland. The Faculties, degrees, diplomas, &c. of the latter are set forth in the preceding page, and the College provides all the teaching connected therewith in the Dublin Centre.

Fine new buildings have been erected for the College on its site at Earlsfort Terrace, Dublin. The first section of the buildings devoted to the departments of Physics and Chemistry was opened in October, 1916, is now fully equipped for teaching and research, and is capable of accommodating a large body of students. The remainder of the buildings, now almost complete, will, it is expected, be ready for occupation in October, 1918. Altogether these buildings afford the Dublin College opportunities of great expansion both in respect of research and of teaching.

Facilities for Research.—In addition to the prescribed courses for degrees in all Faculties, and the Higher Diploma in Education, research is encouraged directly in relation to the Master's Degree in Arts and in Science by particular postgraduate studies, and generally in the departments of Science by the facilities offered to advanced students who, after the Master's Degree, desire to pursue work in special subjects. The statutes of the University permit approved students of other universities, or otherwise, to submit research studies conducted within the College for Master's and Doctor's Degrees in Science. Special opportunities are thus available for students, home or

foreign, who satisfy the Academic bodies that they are qualified to undertake such research.

Special prominence is given to Chemistry, Experimental Physics, Mathematics, and Mathematical Physics, Celtic Studies, Classics, Pathology, Physiology and Music.

For research no special fees are charged beyond material expenses, in most cases.

Library, Museums, &c.—The library contains about 60,000 vols., including 17,000 forming the late Catholic University Library, received on loan, the Zimmer Library of Celtic literature (Irish, Scottish, Welsh, Manx, Cornish, and Breton, some 6,000 books and pamphlets), and the library of the late Royal University. The Museum of Ancient History contains Greek and Roman coins and other originals, replicas, and illustrations. The laboratories include those of the late Royal University.

Halls of Residence.—Every student must enter under a Dean or Officer of Residence, who is charged with the supervision of his general conduct outside the College, and particularly with the supervision of the lodging-houses recognised as suitable by the College. For men: there are, in addition, University Hall, Hatch Street, and Houses of Residence in connection with Castleknock, Blackrock, and Terenure Colleges. For women: Loreto Hall, 77, St. Stephen's Green, and St. Mary's Dominican Hall, 49, St. Stephen's Green.

Recreation and Athletics.—Athletic grounds, about 19 acres in extent, with fine pavilions, are placed at about 15 minutes' drive by electric tram from the College, and all the ordinary clubs, both for men and women, are well maintained. College debating societies, scientific and literary, medical and musical societies are also actively conducted. There is a students' dining room, although students do not reside in the College.

Number of Professors and other Teachers.—54, with a very large staff of assistants.

Number of Students.—972 (233 women); occasional, 45.

Official Publications.—The Calendar, September, 2*s.*

President:—D. J. Coffey, M.A., M.B., B.Ch., B.A.O., LL.D.

Registrar (to whom inquiries should be addressed):—Professor A. W. Conway, M.A., D.Sc., F.R.S., 86, St. Stephen's Green.

University College, Cork.

The city of Cork is situate in the south of Ireland on the River Lee, and has an exceptionally fine harbour, often inaccurately called Queenstown Harbour. Ships drawing 28 feet of water can come up to the centre of the city, and there is a very considerable foreign trade.

Woollen goods, down quilts (the largest manufactory in the world), fine chemicals, artificial fertilisers, paints, brushes, preserved foods (Crosse and Blackwell), are the principal manufactures. In addition there are the following industries:—brewing, distilling, shipbuilding, iron founding, tanning, bacon curing.

The "Bells of Shandon," known all the world over by Mahony's ("Father Prout") poem, swing in the steeple of St. Ann's Shandon Church.

The Munster Dairy and Agricultural School, with a farm of 180 acres, is about two miles from the city.

The College is situate on what is locally called "the Top of the Rock," being on the site of the original Monastery founded by Saint Finnd Barr in the sixth century, and afterwards the Franciscan Friary of Gillabbey, destroyed on the dissolution of the monasteries. Built in 1845, the older part of the College is a good example of the Tudor style of the period. It contains

a large hall, Library, Lecture Rooms, Museums, and Laboratories. The Library of the College contains more than 60,000 vols., and includes the celebrated collection of Celtic works made by the late Professor d'Arbois Jubainville. There are long series of most of the scientific journals and proceedings of learned societies, and the Crawford Library contains a number of rare works.

Museums, &c.—There are Museums of Natural History (including the Harvey Collection and "hortus siccus"), Geology and Mineralogy, Archæology and Ethnology (including the collections made during the voyage of the *Basilisk*; by Colonel Sexton in the Himalayas; and the Newton gift of Greek vases). The Medical Museums contain anatomical and pathological specimens and objects belonging to the Materia Medica section, and there is a special Museum for Surgical Instruments. The Crawford Observatory has an 8-inch equatorial telescope and a 4-inch siderostat with spectroscope. In the Botanical Garden are specimens of all the natural orders capable of being illustrated by open-air specimens. There are rock and water gardens, an artificial bog, and large plant houses for specimens requiring heat. The Laboratories for Chemistry and Physics occupy a large modern detached building. The Honan Biological Institute, detached from the other buildings, is connected with the plant houses and other experimental rooms, and provides laboratories for Zoology, Botany, Geology, and Petrology. The Engineering laboratories consist of (1) a laboratory for testing the strength of materials, containing important testing apparatus and including a 200,000-lb. Olsen Universal Testing Machine; (2) a Hydraulics Laboratory with all the most modern apparatus "life-size." Students of Mechanical and Electrical Engineering do their practical work at the well-equipped Laboratories of the Municipal Technical Schools, though there is a small practical Laboratory for Electrical Engineering in the College. In the Medical School there are, besides the Dissecting Rooms, Laboratories for Physiology, Pathology, and Pharmacy.

The entire course for all degrees or diplomas of the University (except one year in the course for B.Sc. in Agriculture) is provided. Students are also prepared for the examinations of the University of London.

Facilities for Research.—Opportunities for research are provided by the Engineering Laboratories, in which a great deal of research, especially in connection with reinforced concrete, is carried on, some of it under a grant from the Department of Scientific and Industrial Research. There is a special opportunity also for experimental work in Hydraulics in the recently constructed laboratory. Good opportunities are afforded of studying Botanical problems, and especially plant diseases.

The Commerce Department is very fully organised and by special arrangements made with the business men of Cork, the students can do six months' practical work in railway offices, accountants' offices, and other places of business.

Scholarships.—All strictly College Scholarships, as apart from those given by Borough and County Councils and the Honan Scholarships, are open to colonial and foreign students.

Fees.—The fees for courses range from £5 10s. to £22 10s. per session, including the College fee.

Halls of Residence.—For men (Catholics only): the Honan Hostel. There is a list of lodgings which are recognised by the College, and for which the average cost in normal times ranges from 17s. to 25s., including board. Every student must be entered under a Dean of Residence (Catholic, Church of Ireland, Presbyterian, Methodist, Hebrew, and others).

Number of Professors and other Teachers.—65.

Number of Students at present on the College Register.—535, which does not include those in attendance on evening classes.

Official Publications.—Calendar, Sept., 1s.; Handbook, free; University College Gazette, terminally, free.

President :—Sir Bertram C. A. Windle, M.A., M.D., D.Sc., LL.D., F.R.S.

Registrar :—Professor P. J. Merriman, M.A.

Foreign Correspondent :—Professor Mary Ryan, University College, Cork

University College, Galway.

Galway is an ancient town, formerly fortified, with a safe haven and a floating dock of 5 acres area. It is a centre for herring and salmon fisheries, possesses flour mills, iron foundries, woollen factories, and timber yards, and exports agricultural produce and black marble. Its present population is 13,255. It is the seat of a Roman Catholic Diocese.

Queen's College, Galway, was opened for students in 1849, and became a Constituent College of the National University of Ireland in 1908.

The College grounds are just outside the town of Galway, and on the west side of the River Corrib. The main building is in the Perpendicular style of English Gothic, and is built of cut limestone in the form of a quadrangle. The other College buildings are the Anatomical School, the Engineering School, and the College Union.

Library, Museums, &c.—The library contains over 40,000 volumes. The College possesses Laboratories for Physics, Chemistry, Biology, Physiology, Pathology, Geology, and Engineering; and Museums for Natural History, Materia Medica, and Gynæcology, and an Anatomy Department.

Degrees and Diplomas.—Students of the College can obtain the Degrees of the National University in Arts, Celtic, Science, Law, Medicine, Engineering and Commerce, Diplomas in Education, and Certificates in Commerce. These degrees are open to Colonial and foreign students.

Scholarships.—Scholarships, Exhibitions, and Prizes amounting to £1,600 are offered annually by the Governing Body, and are open to Colonial and foreign students.

Facilities for Research.—There are ample facilities for research in Physics, Chemistry, Physiology, Pathology, and Geology. In this connection it may be stated that Galway is situated in the heart of an Irish-speaking district.

Fees.—Every student is required to pay a College fee and fees for courses. The College fee is £1 10s. for a man, and £1 for a woman, and includes membership fees of the College societies. The fees for the courses leading to degrees are approximately: Arts, £22; Science, £30; Law, £8; Medicine (including hospital fees), £65; Engineering, £37; and Commerce, £24. The fee for a postgraduate or research course is £5.

Students proceeding to a degree in Medicine are required to spend one year at a Metropolitan Hospital after a four years' course in the College.

Residence.—Students not living with their parents or guardians are required to reside in lodging-houses licensed by the College. Many licensed lodging-houses are situated in Salthill, a suburb of Galway, which is a watering-place and health resort much frequented in summer months.

Before the war the cost of board and lodging for a student varied from 13s. to 16s. a week.

A College club house or union has been provided by the Governing Body for students. Every student is required to register under a Dean of Residence, who exercises supervision over the general conduct of students outside the precincts of the College, and every woman student is required to register under a Lady Superintendent, who exercises supervision over the conduct of women students within the precincts of the College.

There are 24 Professors, 6 Lecturers, and 8 Assistants and Demonstrators in the College.

Number of Students —267.

Official Publications.—The College Handbook and a list of licensed lodging-houses can be obtained from the Registrar gratis and post free.

The following publications can be obtained from Messrs. O'Gorman & Co., Galway :—The College Calendar, 1*s.* 5*d.*; Regulations for Degrees, 3½*d.*; Regulations for Scholarships, 3*d.*

President :—Alexander Anderson, M.A., D.Sc., LL.D.

Registrar :—Rev. J. Hynes, B.D.

Special Colonial and Foreign Correspondent :—Professor Emily Anderson, B.A.

UNIVERSITY OF LEEDS.

Situate in the West Riding of Yorkshire, the city has many notable buildings, and has for centuries been noted for its woollen goods. There are several public parks. The chief industries of the district are :—Woollen and worsted industry, tailoring, ironworks, machine, boiler, and engine making, boot and shoe and cap manufacture, leather tanning, printing, chemical manufacture, dyeing, brewing, flax spinning, glass making, paper making, coal mining, stone quarrying, firebrick works, pottery manufacture.

The main University buildings housing the Faculties of Arts, Science, and Technology, front College Road, and extend over some eight acres of land. Departments of Russian, Spanish, Economics, and Law are accommodated in houses near the main buildings. The School of Medicine is in Thoresby Place, in the immediate vicinity of the General Infirmary. The Duncombe Observatory is in Woodhouse Moor, and an educational Farm is at Garforth (about 7 miles from Leeds).

Library, Museums, &c.—The General Library of the University contains about 30,000 volumes. Also various departmental libraries. Museums :—Textile, Colour Chemistry and Dyeing, Zoology, Pathology, Materia Medica, Anatomy. Laboratories : Physics, Zoology, Chemistry, Botany, Geology, Engineering (Electrical, Civil, and Mechanical), Mining, Fuel and Metallurgy, Textile, Colour Chemistry and Dyeing, Agricultural Chemistry, Institution for Research in Animal Nutrition, Physiology, Pathology and Bacteriology, Leather Industries (including Procter International Research).

Faculties.—Arts (including Law, Economics and Commerce, and Education); Science; Technology (including Agriculture, Coal Gas and Fuel industries with Metallurgy, Engineering, Leather and Textile Industries, Colour Chemistry and Dyeing, Mining); Medicine (including Public Health and Dentistry).

Degrees and Diplomas.—Pass B.A. (3 years), Hons. B.A. (3 or 4 years), M.A., Litt.D., LL.B. (3 years), LL.M., LL.D.; B.Com. (3 years); Pass B.Sc. (3 years, but 4 years if Colour Chemistry taken), Hons. B.Sc. (3 or 4 years), M.Sc., D.Sc.; M.B., Ch.B. (5 years), M.D., Ch.M., B.Ch.D. (Dentistry) (5 years), M.Ch.D.; Ph.D. (2 years) in Faculties of Arts, Science and Medicine; Diplomas :—Education, French, German (each 1 or 2 years), Commerce (2 years), Social Organisation and Public Service (2 years), Public Health, Psychological Medicine, Dental Surgery (4 years), and also in each of the Technological Departments except Agriculture (in which students are prepared for the National Diploma).

No degree is conferred by the University until after an approved course taken in the University of at least two years and the passing of the Final examination. Subject to this proviso, members of any University requiring residence as a condition of graduation may be permitted to count such residence as equivalent to residence in this University, and to count examinations passed by them at such other Universities as equivalent to examinations or portions of examinations other than the Final Examination of this University, as the Senate may from time to time determine. For the Diplomas in Applied

Science, graduates or others furnishing satisfactory evidence of previous scientific training may be admitted upon a shortened period of study.

University Fellowships.—Open to graduates of Leeds; value, £100, tenable for one year, renewable; object, to enable graduates to undertake approved research. *Gas Research Fellowship :*—Awarded by Senate to a duly qualified candidate for prosecution of postgraduate research in Gas Chemistry. *Research Fellowship in Colour and Textile Chemistry :*—For prosecution of scientific investigations in Textile and Colour Chemistry; preference given to candidates who have graduated with Honours in Colour Chemistry and Dyeing. *John Rutson Scholarship :*—Value, £70, tenable for one year, and renewable; for research in Faculty of Arts. *Bodington Memorial Fund :*—Income annually awarded, approximately £45; for encouragement of advanced study in Greek and Latin among graduates of the University. *Clothworkers' Research Scholarship in Colour Chemistry and Dyeing :*—Value, £60 tenable for one year and renewable; awarded on results of Final B.Sc. examinations; for prosecution of some special research in Colour Chemistry and Dyeing. *Clothworkers :*—Three, of the value of £20 each, awarded annually to students in the Textile Department. *Infirmary :*—Value, 40 gs.; awarded on results of First M.B. examination. *Thorp Scholarship in Forensic Medicine and Hygiene :*—Value, £25; awarded to student or graduate of Leeds for research in some subject bearing on Forensic Medicine or Public Health.

Facilities for Research.—Special provision is made for Research. In the various scientific and technological laboratories, graduates of other universities (British or foreign) and other qualified chemists may obtain admission as research workers for any period. Research students are also admitted to the Pathology and Bacteriology and Physiology laboratories.

Fees.—Matriculation fee (for Degree students), £2. Composition fees for tuition: Arts, £19 11*s.* a session; Science, £27 11*s.*; Technology, £31 11*s.*; Agriculture (other than degree students, who pay the Science fee), winter course, £10; summer course, £5; Law Intermediate course, 9 gs. a session; final course, 15 gs. Course for Diploma in Education, £15; Diploma in Social Organisation, £15. Medicine: complete course up to first examination, £27 11*s.*; courses for second and final examinations, £115 2*s.* 6*d.* Dentistry (excluding Pupilage) Diploma, £91 10*s.*; Degree, £107. Research fee, 7 gs. per session. Students' Union fee, £1 1*s.* annually. Examination fees: Arts, Science, &c., £2; Medicine (including graduation), £15; graduation fee, £5.

Halls of Residence.—For women: University Hall (Warden), De Grey Road, and Lyddon Hall (Warden), Virginia Road, £32 to £41 a session.

Recreation and Athletics.—Athletic ground (22 acres), 15 minutes by tram from the University, with large pavilion; hard tennis courts in University grounds adjoining refectory; gymnasium; fives court common rooms in separate houses for men and women students.

Affiliated Institutions.—The College of the Resurrection, Mirfield (Warden): Students are exempt from attendance at the University in the first of the three years of study for the B.A. degree. The Technical College, Huddersfield (Principal): attendance at certain classes in this College is recognised as exempting from attendance at classes in the University in the first year of the courses required for the degrees of B.A., B.Sc. (including Engineering), M.B., and Ch.B. Rawdon College (Principal): attendance at certain classes in this College is recognised as exempting from attendance at classes in the University in the first year of the course for the B.A. Ordinary and Honours degree.

Number of Professors and other Teachers.—186.

Number of Students.—1,065 (204 women); evening, 217.

Official Publications.—The Calendar, 1*s.* 5*d.*; examination papers, 1½*d.* each, or 7*d.* dozen; general prospectus and prospectuses of separate departments, free.

Vice-Chancellor :—M. E. Sadler, Litt.D., LL.D., C.B.

Secretary (to whom inquiries should be addressed) :—A. E. Wheeler.

UNIVERSITY OF LIVERPOOL.

Liverpool is a cathedral city on the north bank of the estuary of the Mersey, having 333 acres of docks (22 graving docks), and 23 miles of quay, and on the Cheshire side of the river 164 acres of docks and 9 miles of quay. It received its first charter in 1173, and is now one of the greatest seaports in the world. Several lines of steamships sail from here to New York and the large American and Canadian ports and East and West Indies. It is celebrated for fine buildings, *e.g.*, the Town Hall (1754), St. George's Hall (1854), holding 2,500 people, with a magnificent organ. Chief industries: sugar refining, iron and brass founding, rope making, brewing, chemical works, iron chain, cable and anchor making.

Library, Museums, &c.—The library of the University contains 80,000 vols., and includes the Rylands collection of early works on Geography and Astronomy, over 100 incunabula, and the final sheets of the "Constitutiones" of Clement V., printed at Mainz in 1460. Also departmental libraries (Faculties of Science, Medicine, and Engineering), and class libraries. Museums and Laboratories: Anatomy, Archæology (Classical and Oriental, including a unique Hittite collection), Architecture, Bacteriology, Bio-Chemistry, Botany, Chemistry, Physical and Electro-Chemistry, Electricity (Applied), Engineering (including steam, oil, and gas engines, and steam turbines, and facilities for aerial motor and propeller testing and other wind experiments), Hygiene, Materia Medica, Experimental Medicine, Tropical Medicine (including museum with preparations illustrating tropical diseases, and research laboratories at Runcorn, 16 miles from Liverpool, with infected animal farm), Obstetrics and Gynæcology, Pathology, Physics, Physiology, and Histology, Veterinary Anatomy, and Pathology, Zoology (including a Sea Fisheries Laboratory), Geology, Embryology and Genetics. The University has the use of the workrooms of the Port Erin (Isle of Man) Marine Biological Laboratory.

Faculties.—Arts (including Russian and Celtic, Ancient, Mediæval, Modern, and Ecclesiastical History, Architecture, Civic Design, Archæology, Economic Science, Education); Science; Law (including International and Commercial Law); Medicine (including Hygiene, Tropical Medicine and Sanitation, Therapeutics, Mental and Infectious Diseases, Dermatology); Veterinary Science and Dental Surgery; Engineering, Mechanical, Civil (Municipal, Railway, Dock and Harbour Engineering, Refrigeration), Electrical, Marine, Naval Architecture.

Degrees, Diplomas, &c.—B.A. (3 years), B.Arch. (5 years), B.Com.Sc. (3 years), M.A., Litt.D.; B.Sc. (3 years), M.Sc., D.Sc.; M.B., Ch.B. (5 years), M.D., Ch.M., M.H. (Hygiene) (2 years), B.D.S. (5 years), M.D.S., B.V.Sc. (5 years), M.V.Sc., D.V.Sc.; LL.B. (3 years), LL.M., LL.D.; B.Eng. (3 years), M.Eng., D.Eng. Diplomas in Architecture, Civic Design, Education, Commercial Science, Public Health, Tropical Medicine, Dental Surgery, Veterinary Hygiene, Engineering, Anatomy, Bacteriology, Bio-Chemistry and Parasitology. Certificates in Architecture, Architectural Design, Civic Design, Commercial Sciences, Engineering, and in separate subjects in the Faculty of Arts.

Scholarships.—The John W. Garrett International Fellowship in Bacteriology for Research in Bacteriology, Pathology or Physiology, open to members of universities and medical schools in U.S.A. and of other foreign schools, £100 for one year, with a possible extension of two years (applications by May 31), the Johnston Colonial Fellowship in Bio-Chemistry (applications by May 31), £100 for one year, with a possible extension of two years, for research in Bio-

Chemistry, with teaching; Lloyd's Register Scholarships in Naval Architecture, for three years, £50 per annum (men only, British subjects not over 23).

Fees.—Average tuition fee for Degree courses in several Faculties: Arts, £57 (course of 3 sessions); Architecture, £95 (5 sessions); Science, £70 (3 sessions); Medicine, £165 (5 sessions); Hygiene, £48 9*s.* (2 sessions); Dentistry, £204 (4 sessions); Law, £50 (3 sessions); Engineering, £108 (3 sessions). The average cost of the one-session Diploma courses ranges from £11 to £28 8*s.*; for Architecture, Engineering, and Dental Surgery (each 4 sessions), £64, £144 and £169 respectively; and of Certificate courses the cost is from 10 gs. to £72. Matriculation, £2. Combined examination fees: B.A., £2; B.Arch., £3; B.Com.Sc., £2; M.Sc., £1; B.Sc., £2; M.Sc., £1; M.B., Ch.B., £15; Ch.M., £5; M.H., 5 gs.; B.V.Sc., £10; B.D.S., £15; LL.B., £2; LL.M., £1; B.Eng., £2; M.Eng., £1. Combined examination fee for diplomas:—Engineering, £1; Education or Architecture, £2; L.D.S., £15; others, 5 gs. Combined examination fees for Certificates:—in separate subjects in Arts, or Architecture, or Commercial Sciences, £1; in Civic Design or in Engineering, £2. Degree fees:—for Bachelor or Master, £5 (except M.V.Sc., £1, and B.V.Sc.); for Doctor, £10 (except D.V.Sc., £5). Research fee, £3 per session.

Halls of Residence.—Ashton Rathbone Hostel, 13, Croxteth Road (Warden), for men in the Training College; University Hall, Holly Road, Fairfield (Warden), for women, from 40 gs.; the Institut Commercial de Paris Hostel at 36 Prince's Road (Warden), for foreign students attending Commerce courses, and a limited number of other students.

Recreation and Athletics.—University College, Liverpool, was one of the first institutions of the kind to organise student life on a thoroughly democratic basis, a Students' Representative Council being established in 1891. This Council was succeeded in 1903 by a Guild of Undergraduates, to which all students belong. Membership of the Guild includes membership of the athletic section, the debates section, the reading rooms, a departmental society, selected by the student, the dramatic and musical societies, and various other privileges. There is a well-equipped athletic ground and pavilion within easy access of the University. A Students' Union has been erected on a site adjacent to the University. The cost of this club house was approximately £20,000.

Number of Professors and other Teachers.—214.

Number of Students.—956 (271 women). Research, 43 (9 women); part time and occasional, 171 (25 women).

Official Publications.—Calendar, October, 1*s.*; Students' Handbook.

Vice-Chancellor:—Sir Alfred Dale, M.A., LL.D.

Registrar (to whom inquiries should be addressed):—E. Carey, LL.B.

UNIVERSITY OF LONDON.

A Royal Charter, constituting the University of London as a body empowered to grant degrees to students of approved institutions after examination, was granted on November 28, 1836, and on the same day a Charter of Incorporation was granted to University College. King's College had received a Charter of Incorporation in August, 1829.

The University now comprises a large number of Colleges, Schools, and other institutions devoted to learning and research. In most subjects of human interest the Metropolis affords exceptional opportunities of acquiring knowledge, and training is provided in most professions, arts, industries, and branches of commerce.

Faculties.—Arts, Science, Theology, Laws, Medicine, Music, Engineering, Economics and Political Science (including Commerce and Industry).

Students are admitted to the University: (1) after passing the Matriculation Examination, or (under certain conditions) the General School Examination; (2) after passing the examination before a Board of Examiners under Statute 116, if admissible thereto; (3) by obtaining exemption from the Matriculation Examination, if qualified therefor by holding degrees of approved British, Colonial, or Indian Universities, or by having passed all the examinations required for a degree in those Universities, or by having obtained certain other qualifications from Examining Bodies within the United Kingdom.

With regard to (2) above, it may be explained that for the benefit principally of Colonial, Indian, and foreign candidates the "examination under Statute 116" has been instituted, to which candidates can be admitted on production of a certificate from an educational authority showing evidence of an education *primâ facie* equivalent in their own country to that required in England for the Matriculation examination. Such candidates are then examined orally and by papers, and with special reference to the line of study they propose to follow in the University.

The number of candidates matriculated during 1914 was 3,979.

Degrees and Diplomas.—Arts: B.A., M.A., D.Lit., several Diplomas. Science: B.Sc., B.Sc. (Agric.), B.Sc. (Hortic.), B.Sc. (Vet. Sci.), M.Sc., D.Sc. Theology: B.D., D.D. Laws: LL.B., LL.D. Medicine: M.B., B.S., M.D., M.S. Music: B.Mus., D.Mus. Engineering (including Mining and Metallurgy): B.Sc. (Eng.), M.Sc. (Eng.), D.Sc. (Eng.). Economics: B.Sc. (Econ.), M.Sc. (Econ.), D.Sc. (Econ.).

Under Statute 113 the Senate may admit graduates of other approved universities (or persons who have passed the examinations for a degree in approved universities) as internal students and as candidates for a higher degree (except in Medicine and Surgery) without requiring them to have taken any lower degree, and applications for registration under this Statute are considered individually by the Senate. Such registered students must pursue a course of study at one of the schools or institutions of the University (*see* pp. 34–42) extending over not less than two years. A large number of students from many parts of the world have been admitted under the terms of this statute at the various schools and institutions of the University.

Overseas students desirous of entering upon a course of study at the beginning of a session in October are advised to send in applications for registration under Statute 113 so as to reach one of the Colleges in the University or the Academic Registrar not later than 1st May* preceding. Students who have not applied before the dates given above will not be precluded from entering upon their course of study during the session. In every case a decision with regard to their application will be obtained as soon as practicable. With each application there should be furnished by the student (i) A copy of the certificate of having obtained a degree, or of having passed the examinations required for a degree, in his university; (ii) A statement of the course of study which he has pursued, certified by the Head of the Institution from which he comes; (iii) A Calendar or Prospectus of his institution; (iv) Testimonials from his teachers as to his fitness to enter upon a proposed course of study and research; (v) Copies of any papers published by him.

If the student does not express in his application his intention to study at a particular school or institution connected with the University, he will be advised as to the selection of such school or institution.

[*Note.*—The facilities afforded under this Statute apply to internal students only. External students are not allowed to proceed to a higher degree without having obtained the lower degree in the University of London as required by the Regulations.]

* In the case of students from Australia or New Zealand the corresponding date is 1st March.

In addition to internal students the University admits external students to examinations for the degrees in all faculties. Except for degrees in Medicine, Mining, and for the B.A. Honours Degree in Architecture, external students are admitted to the various examinations without being required to submit certificates of having attended courses of study therefor; they may pursue their studies where and how they please.

Certain of the examinations of the University for external students are held not only in London and at provincial centres within Great Britain, but also in the overseas Dominions of the Empire.

Diplomas:—1. Teacher's; 2. Fine Art; 3. Academic Diploma in Geography; 4. Academic Diploma in Sociology and Social Administration; 5. Town Planning and Civic Architecture; 6. Town Planning and Civic Engineering; 7. Household and Social Science. 1 is open only to graduates and others similarly qualified.

The University arranges for the delivery of lectures for advanced students by Professors of other Universities and other distinguished visitors. During the session 1913–14 such lectures were given by Professors of Berlin, Bristol, Brussels, Heidelberg, Leiden, Manchester, Munich, Oxford, Paris, Toulouse, Washington, and Western Reserve Universities, and many other high authorities.

Scholarships.—A certain number of Scholarships, varying in value from £50 to £100, are open to graduates. Information regarding these will be found in the Scholarships pamphlet, obtainable post free on application to the University.

Residence.—The hostel, 10, Carlyle Square, Chelsea, S.W. 3 (in addition to those mentioned under the various Colleges) has been recognised by the Senate: Residence is provided at certain Theological Colleges, at the South Eastern Agricultural College, Wye, and by the following Hospital Medical Schools: St. Bartholomew's, Guy's, Middlesex. All the larger Colleges keep registers of approved lodgings. Residence is provided for women in connection with King's, King's College for Women, Royal Holloway, Bedford, Westfield, and the London School of Medicine for Women.

Libraries.—The Libraries belonging to and connected with the University contain in the aggregate about half a million volumes, distributed over every branch of knowledge. The University Library in the Central Building, South Kensington, contains about 100,000 volumes and pamphlets, and is intended to be so constituted as to provide well-equipped special collections to promote research work and also to serve as a lending library from which students can borrow expensive works for home study. It includes the Goldsmiths' Library of Economic Literature (45,000 volumes), which is restricted to purposes of research and reference. There are, in addition, large departmental libraries in the several Colleges and various collections of books on special subjects, too numerous for mention. Access can also be obtained to the library of the British Museum, the Record Office, &c.

Museums.—Among the many museums which, in addition to those belonging to the Schools and Institutions of the University, are accessible to students in London are the British Museum, Antiquities and Natural History; Horniman, Anthropology and Zoology; London; Parkes, Sanitary Science; Practical Geology; Royal Architectural Society's; Royal College of Surgeons'; Science, South Kensington (Mechanical, Naval, and Structural Engineering, Physics, Mathematics, Chemistry, Physiography, Geology, and Biology); Sir John Soane's, Art and Antiquarian; Victoria and Albert, South Kensington, Architecture and Sculpture, &c.

Official Publications.—The Calendar, published September, 6*s.* net; Regulations and Courses for Internal Students (the "Red Book"), published September, 2*s.* 6*d.*; Regulations for External Students (the "Blue Book"), published September, 1*s.* 6*d.*; Libraries of London, a Guide to Students, 2*s.* 6*d.* (The prices do not include postage.)

Chancellor :—The Earl of Rosebery, K.G., K.T., D.C.L.

Vice-Chancellor :—Sir E. Cooper Perry, M.A., M.D., F.R.C.P.

Academic Registrar :—P. J. Hartog, C.I.E., M.A., B.Sc., L. ès Sc. (to whom inquiries with regard to the Regulations for Internal Students should be addressed).

External Registrar :—G. F. Goodchild, B.Sc., M.A. (to whom inquiries with regard to Matriculation and the Regulations for External Students should be addressed).

Administrative Offices :—S. Kensington, S.W. 7.

University of London : University College.

(Gower Street, W.C. 1.)

The College was founded in 1826 with the title of "The University of London"; by Royal Charter dated 1836, it was incorporated as "University College, London"; and in 1907, under the provisions of the "University College, London (Transfer) Act, 1905," it became an integral part of the present University of London, of which it is the oldest constituent College.

The present work of the College is conducted in the Faculties of Arts (including the School of Architecture, the Slade School of Fine Art, and the Department of Economics), Law, Science, Engineering, and Medical Sciences.

In the session 1913-14 there were 1,607 day students (572 women). Of the 1,607 students, 313 men and 128 women were postgraduate and research students. Postgraduate and research work is provided for in all Faculties. The College equipment has been increased in recent years by the erection of buildings for (i) the University School of Architecture; (ii) the new Chemistry Laboratories, which include special provision for postgraduate and research work in all branches of Chemistry, and in Pathological Chemistry; (iii) the new Department of Applied Statistics and Eugenics; and (iv) the Institutes of Physiology and Pharmacology, to which will be added a new building for Anatomy when circumstances permit.

Fees.—Composition fees: For undergraduate courses the annual payment does not exceed in any Faculty an average of 30 gs. For postgraduate and research work: two years' course of study, leading to M.A. or LL.D., 16 gs. M.Sc. (according to the subject taken), 12 to 25 gs.; course of study for D.Lit. or D.Sc., registration fee, 1 g., and Departmental fee varying according to the subject. Course for Diploma in Public Health, 16 gs.

The general regulation providing for admission of research students is as follows :—

On the recommendation of the Professor of any Department, any student qualified to undertake research work may be admitted to the College for the purpose of undertaking such work. Each student so admitted shall pay in the office a registration fee of 1 guinea per session and such other fee (if any) as the regulations of the Department require, and shall bear the cost (if any) of his work.

Libraries.—The libraries, which contain about 143,000 volumes and 21,000 pamphlets, are classified as follows :—(*a*) The General Library of the College is used as a Reading Room, whilst access to the special libraries mentioned below is confined to Senior students. In the General Library are housed the Morris and Leighton Collections, chiefly of classical literature and philology, the Whitley Stokes Library of Celtic Philology, the Blackburn and Quain Law Libraries, the Field Fine Art Library, the Ricardo Library of Political Economy, and the Graves Mathematical Library. This latter contains 15,000 books and pamphlets relating to Mathematics, Physics and Astronomy. The Edwards Egyptological Library is in close connection with the Egyptological Department. (*b*) The Arts Libraries are arranged in the following order :—I. The Yates Archæological Library. II. The English

Library. III. The German Library. IV. Cataloguing Room. V. The Mocatta Library of Jewish History and Antiquities. VI. and VII. The History Library. VIII. The Romance Philology and Literature Library (including the Barlow Dante Library). IX. The Oriental Library (including the Strong Library). X. The Philosophical and Psychological Library (including the Leighton Philosophical Library). (*c*) The Science Library, which includes the Chemical books bequeathed by Prof. Fownes and Prof. Graham, and the Biological Libraries of Prof. Sharpey and Prof. Grant, also the Library of the Geologists' Association, now transferred to the College, and the periodicals deposited at the College by the British Association.

Museums.—The College possesses the following Museums:—Anatomy, Botany, Egyptology, Geology and Mineralogy, Philosophical Apparatus, Materia Medica, Chemistry, Zoology, Engineering, besides collections of instruments in the departments of Pure and Applied Mathematics.

Laboratories.—The Department of Applied Statistics includes the Francis Galton Laboratory for National Eugenics (with which is associated the Drapers' Company's Biometric Laboratory). The Department is in the first place a Research Department, adapted to the needs of postgraduate workers and of students training for special investigations. Results reached in the laboratories are dealt with occasionally in more popular courses of Lectures. The Francis Galton Laboratory was founded by the late Sir Francis Galton for the study of those agencies under social control that may improve or impair the racial qualities of future generations, either physically or mentally; open to research students in Eugenics of both sexes. The Biometric Laboratory is intended for the statistical study of biological problems. It possesses a good collection of calculating machines, integrating mechanisms, moment-finders, as well as a large series of statistical models, diagrams, and other apparatus, etc. Research workers can start at any time during the session, but, unless attending the lectures in the department, they are expected to have had a preliminary training either in Biology or Mathematics.

The social and athletic life of the College is promoted by the use of athletic grounds of over 20 acres at Perivale. University College Hall, providing collegiate residence for men students, is near to these grounds; College Hall, Byng Place (close to the College), provides residence for women students. The cost of residence at these Halls ranges from 27*s.* to 40*s.* a week.

Provost (to whom all enquiries relating to postgraduate and research work should be addressed):—Sir Gregory Foster, B.A., Ph.D.

Secretary (to whom all enquiries relating to undergraduate work should be addressed):—W. W. Seton, M.A., D.Lit.

University of London: King's College, and King's College for Women.

King's College was founded by Royal Charter in 1829, and is situated in the Strand, next to Somerset House. It provides teaching in the Faculties of Arts, Science, Preliminary and Intermediate Medical Science, Engineering, and Laws. In practically all departments there are evening as well as day classes.

The Arts and Science Faculties of King's College for Women were moved to the Strand in 1915, and the courses in all Faculties are now open to both men and women. King's College was the first school of the University to open its Anatomy Department to both men and women students, and it has now 70 of such women students, who can proceed with their clinical studies at King's College Hospital, Charing Cross, St. George's, or Westminster Hospitals.

Both King's College and King's College for Women are Incorporated Colleges of the University. The teaching staff (apart from the Household and Social Science Department) includes 130 members, of whom 23 are University Professors and 8 University Readers.

In the Department of English special attention is paid to postgraduate work in Bibliography. In History, prominence is given to Mediæval History, and it is hoped that postgraduate work will concentrate on the History of London. Colonial History is also a prominent feature, and research in Naval History, which was begun under the late Professor Sir John Laughton. Ancient History, and especially Ancient Astronomy, are subjects of research. The History of Eastern Europe is strongly represented. So also is Philosophy. The College has been entrusted by the University with the undergraduate and postgraduate work in Slavonic, Spanish, Portuguese, and Modern Greek. Oriental languages have been transferred in the main to the School of Oriental Studies, but Assyriology and Hebrew are still represented, as are also Latin Palæography and the Palæography of the New Testament.

In the Science Faculty, the Departments of Chemistry, Physics, Mathematics, Zoology, Physiology, Botany, Geology, and Psychology give special scope for postgraduate work and research in connection with Glass, in Spectroscopy, Radiation and Thermionic Emission, Physical Mathematics, Comparative Anatomy, with special reference to Sponges, Cerebral and Experimental Physiology, Plant Bio-Chemistry, Invertebrate Palæontology, and Fossil Plants, and Pathological Psychology.

On the Engineering side King's College has always aimed at creating a practical school not too large for individual attention. Students are prepared both for University degrees in Engineering and for the College diploma. Research is carried out in Electrical and other branches of Engineering.

A Department for postgraduate work in Bacteriology and Public Health is situated in Chandos Street, Strand, in the same building as Charing Cross Hospital Medical School.

In the Faculty of Laws King's College joins with University College and the School of Economics in Intercollegiate Courses open to students of all three Colleges.

Fees.—The fees vary according to Faculty. For the degree course in Arts the fee is £22 1*s.* a year; in Science, £31 10*s.* Occasional students may take particular lectures daily in any department at the rate of £1 1*s.* per hour per term. The fee in Laws is £12 12*s.* a year. For a full two years' postgraduate course for M.A. or D.Litt. the fee is £15 15*s.*, for M.Sc. in a laboratory Science subject, £21. For D.Sc. a registration fee is charged of £2 a year, and fees for separate lectures. For research work, other than for a degree, the fee varies with the help required.

The College has developed an extensive scheme of free public lectures on subjects of Imperial, literary, and scientific interest.

Hostels.—King's College Theological Hostel, Vincent Square, S.W. 1; King's College Women's Hostel (in connection with the Department of Household Science), Campden Hill Road, W. 8, fees, 70 gs. The Platanes, Denmark Hill, S.E. 5, for King's College and King's College Hospital Medical School.

Recreation and Athletics.—There is a vigorous and varied social life in College. The societies include French, Russian, Historical, Literary (with a separate Modern Poetry and Drama group), Chemical, Engineering, Medical, Dramatic, Musical, Christian Union. The College possesses a good athletic ground.

Short voluntary daily services take place in the College Chapel belonging to the Theological Department, which is a school of the University but is not incorporated in it. Before the war two hundred students were preparing in it for Holy Orders, many of them for the B.D. of the University.

The Household and Social Science Department of King's College for Women was moved in 1915 to new buildings on Campden Hill, W.8, and is financially independent. The University of London grants a diploma for the three years' course. Postgraduate courses or research work arranged for. Residential hostel forms part of the College. Tuition fees, 30 gs. per annum;

residence, 70 gs. Cost of research according to arrangement. Inquiries should be addressed to the Secretary.

Principal :—R. M. Burrows, D.Litt., Hon. Ph.D. (Athens).

Administrative Officer for Women Students :—Irene C. Major, B.A.

Dean of the Household and Social Science Department :—Janet Lane-Claypon, M.D., D.Sc.

Secretary (to whom all inquiries should be addressed) :—Walter Smith, King's College, Strand, W.C. 2.

Imperial College of Science and Technology.

(South Kensington, S.W. 7.)

(*Founded by Royal Charter*, 1907.)

(Including as integral parts the Royal College of Science, the Royal School of Mines, and the City and Guilds (Engineering) College.)

The Imperial College was founded for the purpose of giving the highest specialised instruction and providing the fullest equipment for the most advanced training and research in various branches of Science, especially in its application to industry.

The work is organised in 27 main and sub departments with the following Professorships :—*Royal College of Science.*—Astro-Physics, Botany, Chemical Technology, Fuel and Refractory materials (Chemical Engineering under Assistant Professor), Chemistry, Comparative Pathology, Economic Mineralogy, Entomology, Geology, Mathematics (Pure), Mathematics (Applied), Organic Chemistry, Physical Chemistry, Physics (3), Plant Physiology (Bio-chemistry under Assistant Professor), Technical Optics (including Optical Design) (2), Technology of Woods and Fibres, Zoology. *Royal School of Mines.*—Mining, Metallurgy, Oil Technology (under Professor of Geology). *City and Guilds (Engineering) College.*—Civil Engineering, Electrical Engineering, Mechanical and Motive Power Engineering (including Aeronautical and Railway Engineering). Total staff exceeds 200, including 19 Fellows of the Royal Society.

Special facilities are provided for advanced and research work in all branches leading, by one or more years' work, to the diploma of membership of the Imperial College; admission and fees specially determined in each case; usual fee, about £10 per annum.

Facilities are also provided for less advanced work, approximately B.Sc. standard (three-year courses) in all main subjects leading to diplomas of (*a*) Associateship, the Royal College of Science (A.R.C.S.); (*b*) Associateship, the Royal School of Mines (A.R.S.M.); (*c*) Associateship, City and Guilds Institute (A.C.G.I.). Admission to first year by examination or equivalent record. The subjects of examination include Mathematics and Mechanics, Chemistry, Physics, English, French or German or Spanish, Mechanical or Freehand Drawing. Annual fees: (*a*) £36 10*s.*; (*b*) £45 10*s.*; (*c*) £38 10*s.*

Six Entrance Scholarships of £40 per annum for three years are awarded on Entrance Examination annually both at the Royal College of Science and the City and Guilds (Engineering) College. The only other awards open to students outside the United Kingdom are three Beit Scientific Research Fellowships, £150 for a year, renewable for a second year, tenable at the Imperial College, open to men and women graduates below the age of 25 on the date of election, of European descent by both parents, otherwise of any nationality.

The Imperial College is non-residential, without a hostel—students reside in the neighbourhood at a weekly cost varying from 30*s.* upwards. Not less than £150 per annum desirable for all purposes for full year's work. There is a club (premises cost about £20,000), open to all students, with dining, smoking, library, gymnasium, and other rooms.

The Imperial College buildings, seven in number, occupy about 8 acres of land, and represent upwards of a million sterling, including lands, buildings, and equipment; approximate annual revenue, £90,000 dependent upon grants from H.M. Government, the London County Council, the City and Guilds of London Institute, upon the fees of students, and the income from invested capital.

Rector :—Sir Alfred Keogh, G.C.B., LL.D.

Secretary (to whom all inquiries should be addressed) :—A. Gow, M.A., B.Sc.

Royal Holloway College.

The Royal Holloway College was founded by the late Thomas Holloway; it was opened by Queen Victoria in 1886, and the first session began in October, 1887. In the Statutes made under the University of London Act, 1898, the College was named as a School of the University. There are at present 160 students, all resident, and a staff of 30 men and women Professors, Lecturers and Demonstrators. The students prepare for all the degrees of the University in Arts and Science, including the Research degrees of Master and Doctor.

The College is situate on rising ground at Egham, Surrey, 19 miles from London, and 5 miles from Windsor. It is built in the style of the French Renaissance, and forms a double quadrangle, measuring altogether 550 feet in length. The general design is that of two lofty blocks running parallel to each other, connected in the middle and at the ends by lower cross buildings, each of which is divided into two parts by a central tower. The two long blocks contain rooms for the staff and students, and lecture rooms. Each student has a furnished sitting-room and a bedroom. The three cross buildings contain the large halls, such as the Chapel, Libraries, Picture Gallery and Dining Hall.

The College estate is 95 acres in extent. It is well wooded, and contains picturesque walks and abundant facilities for outdoor recreation, such as tennis courts, hockey and cricket fields, and grounds set apart for the students' own gardening. The Chemical Laboratory, the Infirmary and the Swimming Bath are separate buildings in the grounds; other laboratories are in the main buildings.

The inclusive fee for board, residence and tuition is £108 a year, and a number of Founder's and Entrance Scholarships are awarded annually. Several other Scholarships and Postgraduate Studentships are also available for students already in residence.

Principal (to whom inquiries should be addressed):—Miss E. C. Higgins, B.A.

Bedford College for Women.

(Regent's Park, N.W. 1.)

Bedford College is a recognised school of the University of London in the Faculties of Arts and Science. Students are prepared for the University B.A. and B.Sc. Pass and Honours degree examinations, and the necessary instruction is provided for students reading for M.A. and M.Sc. degrees or undertaking other postgraduate work.

The secondary Training Department is recognised by the Board of Education and offers full preparation for the Teachers' Diplomas of the London University and the Cambridge Syndicate.

A course of Social Studies is arranged, suitable for women wishing to take up public work either in connection with Public Health or in other departments of social activity.

In addition to spacious and well-equipped departmental scientific laboratories, the Pilcher Research Laboratory is available for postgraduate investigations in Science or in Arts.

There is a large general Library, and departmental libraries are provided in the various subjects.

The College buildings provide accommodation for about 500 students, including 93 residents, while a college hostel near by accommodates 15 resident students. The grounds of 8 acres' extent afford facilities for lawn tennis and other games. The corporate life of the College is strongly marked, resident and day students uniting in its various activities.

Fees (per session).—Intermediate Arts, 30 gs.; B.A. Pass or Honours, 27 gs.; Intermediate Science and Final B.Sc. Pass, 38 gs.; Final B.Sc. Honours, 27 and 38 gs.

The residence fees are 62 to 77 gs. per session.

A varying number of Entrance Scholarships in Arts and Science is awarded each year. A Reid Fellowship is offered every alternate year to a former student of the College who is a graduate of the University. There are various prizes, and students are also eligible for University Scholarships and prizes.

Principal :—Miss M. J. Tuke, M.A.

Secretary (to whom inquiries should be addressed) :—Miss M. S. Clarke.

East London College.

The East London College is a School of the University of London in the Faculties of Arts, Science, and Engineering, and carries on work in the Faculty of Medicine in conjunction with the London Hospital Medical College. Students are prepared for the first and higher examinations of the University of London in the first three of these Faculties, and facilities for research and postgraduate work are afforded at the College.

There is an Aeronautical Department in connection with the Faculty of Engineering, and a course is provided in Aeronautical Engineering.

A residential hostel for women has recently been founded.

The College is liberally supported by the Drapers' Company of the City of London, who also give annually Scholarships tenable at the College.

Principal :—J. L. S. Hatton, M.A.

Registrar :—E. J. Wignall.

The London School of Economics.

(Clare Market, Kingsway, W.C. 2.)

The London School of Economics and Political Science is a School of the University of London. Its teaching is in the main intended for candidates for degrees in the Faculty of Economics and Political Science [B.Sc. (Econ.), M.Sc. (Econ.) and D.Sc. (Econ.)]; but its students may proceed to research degrees in the Faculty of Arts (M.A. and D.Lit.); and in the Faculty of Science (D.Sc.). The course of study in the Faculty of Economics and Political Science makes special appeal to students older than the usual undergraduate class. Lectures are attended and research work is done by many students not proceeding to degrees. The course develops to a very special extent the open critical attitude of mind essential to the carrying on of research which is to have any value.

The subjects dealt with are classified under the following heads :—Economics, Politics and Public Administration, including Public Finance, History, Law, Geography, Ethnology, Sociology, Commerce and Industry, Accounting and Business Methods, Banking, Currency and Finance, and Transport. In addition the Ratan Tata Department of Social Science and Administration of the University of London is located at the School, and its

work forms an integral part of it. In all these departments research is carried on. Whereas the undergraduate course of study begins in October and continues throughout the session until the end of June, research students may be enrolled at any time. They may work under individual supervision of one or more lecturers, or if there is a seminar or special class in the subject of their research they become members. The lectures at the School likely to be useful to them are pointed out; the method of utilising the British Museum, the Public Record Office, and other great collections of records and material is explained. Connected with the School itself there is a very large and important library packed with the material for research, all of which is catalogued, and most of it indexed and immediately available for the use of research students, under the expert assistance of the librarian.

Fees.—The research fee is 3 gs. for the session. A fee of 10 gs. a session covers the full course of study, and gives admission to every course of lectures being delivered.

Director :—The Hon. W. Pember Reeves, Ph.D.

Secretary (to whom inquiries should be addressed) :—Miss C. S. Mactaggart.

The Brown Animal Sanatory Institution.

The Brown Animal Sanatory Institution affords opportunities for the investigation and study of diseases of animals.

The Physiological Laboratory.

Courses of lectures on current research are given by Lecturers of the University and other duly accredited Physiologists in this Laboratory, in the University Building, which is devoted to research.

The Francis Galton Laboratory.

The Francis Galton Laboratory for National Eugenics, together with the Drapers' Company Biometric Laboratory, form a Department of Applied Statistics, which is housed at University College. It was founded in 1904 "for the study of those agencies under social control that may improve or impair the racial qualities of future generations either physically or mentally." Provision is made for training in statistical methods and for assisting research workers in special Eugenic problems.

Lister Institute of Preventive Medicine.

Lister Institute of Preventive Medicine (1901) (late Jenner Institute of Preventive Medicine). A School of the University for the purpose of Research in Hygiene and Pathology; admitted 1905.

The University Professor of Protozoology is accommodated in the Institute's Department of Protozoology. The laboratories of the Institute are open to students (both men and women) and usually no fees are required. Address: Chelsea Bridge Road, S.W. 1.

Director :—C. J. Martin, M.B., D.Sc., F.R.S.

Assistant Secretary :—G. C. Nooth Cooper.

Medical Schools.

The Schools of the University in the Faculty of Medicine which provide instruction for the M.B., B.S. degrees of the University are set forth below, together in each case with the date of their foundation and address. For information with regard to courses of instruction, fees, &c., application should be made to the authorities of the Schools or Colleges.

Hospital Medical Schools :—

St. Bartholomew's Hospital Medical School (Hospital, 1123; School, 1662), West Smithfield, E.C. 1.

St. Thomas's Hospital Medical School (apprentices mentioned, 1561; School re-organised, 1842), Albert Embankment, S.E. 1.

*Westminster Hospital Medical School (1834), 12, Caxton Street, Westminster, S.W. 1.

Guy's Hospital Medical School (in connection with St. Thomas's Hospital, 1769; as a separate School, 1826), St. Thomas's Street, Borough, S.E. 1.

†St. George's Hospital Medical School (Register of Students exists from 1752), Hyde Park Corner, S.W. 1.

‖London Hospital Medical College (1785), Turner Street, Mile End, E. 1.

Middlesex Hospital Medical School (1835), Union Street, W. 1.

*Charing Cross Hospital Medical School (1834), Charing Cross, W.C. 2.

‡London (Royal Free Hospital) School of Medicine for Women (1874), 8, Hunter Street, Brunswick Square, W.C. 1.

University College Hospital Medical School (formerly part of the Faculty of Medicine of University College). Constituted a separate corporation under the University College London (Transfer) Act, 1905), University Street, Gower Street, W.C. 1.

*King's College Hospital Medical School (formerly part of the Faculty of Medicine, King's College). Constituted a School of the University in the Faculty of Medicine (Advanced Studies), September 1st, 1909, under the Corporation of King's College Hospital, by the King's College London (Transfer) Act, 1908, Denmark Hill, S.E. 5.

§St. Mary's Hospital Medical School (1852), Paddington, W. 2.

University Centres) :—

*University College (1826), Gower Street, W.C. 1, and *King's College (1829), Strand, W.C. 2, incorporated Colleges of the University, are centres of instruction in the subjects of the first examination for Medical Degrees (Inorganic Chemistry, Physics, and General Biology), and of the Second Examination, Parts I. and II. (Organic Chemistry, Anatomy, Physiology, and Pharmacology). Courses in these subjects are taken by students of St. George's Hospital Medical School at University College or King's College, and by students of Westminster and Charing Cross Hospital Medical School at King's College.

There are a number of other Schools and Institutions at which approved courses of instruction for Internal Students are given for the First Examination for Medical Degrees.

Fees for Tuition.—For the complete course extending over 5½ years the fees, including entrance fees, vary from about £150 to £200.

For Examinations in Medicine.—The sum of the fees payable for entry to the First Examination, the Second Examination, Parts I. and II., and the Third or M.B., B.S. Examination is 25 gs.

Residence.—Several Medical Schools are provided with Hostels, at which the cost of board and lodging is from 35s. to 45s. per week.

Hospitals and other Institutions for special purposes :—

*London School of Tropical Medicine (1899), Albert Docks, E. 16.

Royal Army Medical College (1902) for Officers of the Royal Army Medical Corps, Grosvenor Road, S.W. 1.

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* Open to women as well as men.

† A certain number of women students admitted during the continuance of the war.

‡ Open to women students only.

§ A certain number of students from the London School of Medicine for Women are admitted for the clinical portion of the curriculum only.

‖ Open to women (in 1918–19 for the clinical portion of the curriculum only).

*Bethlem Royal Hospital (1247) for instruction in Mental Diseases, Lambeth Road, S.E. 1.

*Hospital for Consumption and Diseases of the Chest, Brompton (1841), Fulham Road, S.W. 3.

*Hospital for Sick Children (1852), Great Ormond Street, W.C. 1.

†National Hospital for the Paralysed and Epileptic (1859), Queen Square, W.C. 1.

*Royal London Ophthalmic Hospital (1804), City Road, E.C. 1.

*Royal Dental Hospital and London School of Dental Surgery (1858), 32, Leicester Square, W.C. 2.

The Naval Medical School of the Royal Naval College, Greenwich (1912), for the Officers of the Royal Naval Medical Service, Greenwich, S.E. 10.

*The National Dental Hospital and University College Hospital Dental School (1861), 187 to 191, Great Portland Street, and 59, Devonshire Street, W. 1.

*School of Pharmacy of the Pharmaceutical Society of Great Britain (1842), 17, Bloomsbury Square, W.C. 1.

OTHER SCHOOLS OF THE UNIVERSITY AND INSTITUTIONS UPON WHOSE STAFF ARE "RECOGNISED TEACHERS":—

School of Oriental Studies.
Goldsmiths' College.
South-Eastern Agricultural College, Wye.
Westfield College (for Women).
London Day Training College.

Theological Colleges:—

New College, Hampstead.
Hackney College, Hampstead.
Regent's Park College.
King's College: Theological Dept.
Wesleyan College, Richmond.
St. John's Hall, Highbury.

Battersea Polytechnic.
Birkbeck College.
City of London College.
Finsbury Technical College.
Jews' College.
Northampton Polytechnic Institute (with a special department for the study of Technical Optics).
Northern Polytechnic Institute.
Royal Veterinary College.
Sir John Cass Technical Institute.
South-Western Polytechnic Institute.
West Ham Municipal Technical Institute.
Woolwich Polytechnic.

Training Colleges for Teachers

Maria Grey Training College (for Women).
St. Mary's College, Paddington (for Women).
Borough Road College, Isleworth.
St. John's College, Battersea.
St. Mark's College, Chelsea.

Royal Academy of Music.
Royal College of Music.
Trinity College of Music.
Guildhall School of Music.

UNIVERSITY OF MANCHESTER.

The main site of the University buildings has its frontage on Oxford Road, leading southward from the city.

Most of the buildings are arranged in two quadrangles. On the west side of the front quadrangle is the central building, completed in 1874, containing various lecture theatres and laboratories, and the administrative offices. On the east side is the museum, erected in 1887. A special wing of the museum was erected a few years ago to house the Egyptological collection, and to give additional accommodation for Geology. On the same side is the Whitworth Hall, erected in 1901, with seating accommodation for upwards of 1,000 persons, the gift of Mr. Christie, one of the residuary legatees of the late Sir Joseph Whitworth. The organ and organ screen were the gift of Mrs. Rylands. On

* Open to women as well as men.
† Lectures open to women as well as men.

the north side of the front quadrangle are the Beyer Biological Laboratories, added in 1887, and on the south side the Christie Library, containing 138,000 volumes, which was built and presented to the University by Mr. Christie in 1897. In the back quadrangle, on the south side, are the Chemical Laboratories, which were originally built in 1874 and extended later by the erection of the Schorlemmer, the Dalton, and Schunck Research Laboratories, and again in 1909 by the John Morley Laboratory, erected mainly at the cost of Mr. Andrew Carnegie. Beyond the back quadrangle, on the west side, are the Medical School buildings, which have been twice enlarged. The new Engineering Laboratories on the north side of the back quadrangle were erected and opened in July, 1909. Northwards of the main buildings stand the Physical Laboratories, enlarged in 1912 by the addition of the John Hopkinson Laboratory for Electro-Technics. The Public Health Laboratories, erected in 1902, are situate in York Place, about half a mile south of the main buildings. On the Edward Behrens estate, on which the Ashburne Hall stands, the University has erected laboratories for the study of Economic Zoology and Botany. A new Arts building, adjoining the University site, has been in progress since the outbreak of the war, but has not yet been opened.

Separated from the University by Burlington Street, on the south side, are the Men's and Women's Union buildings, and the Refectory, and adjacent to these is the gymnasium, with a large examination hall on the ground floor below. The Athletic ground (about 13 acres) is situate on the Firs Estate at Fallowfield, about 1½ miles south of the University.

Research Degrees.—The University offers the following Research Degrees :— Doctor of Letters (Litt. D.); Doctor of Science (D.Sc.); Doctor of Laws (LL.D.); Doctor of Philosophy (Ph.D.); Master of Arts (M.A.); Master of Science (M.Sc.); Master of Education (M.Ed.); Master of Commerce (M.Com.); Master of Technical Science (M.Sc. Tech.).

Graduates of approved Universities who have obtained the degree of Master, or a degree substantially equivalent to that of Master, may, not less than four years after graduation as Bachelor, offer themselves for the degree of Doctor of Letters or Science on giving satisfactory evidence of their distinction in special research or learning.

The degree of Master may be obtained by graduates of approved Universities who give sufficient evidence of their qualifications and pursue approved research work for a period of not less than two years, or by non-graduates whose general educational qualifications are adequate and who conduct approved research work for not less than three years.

A new degree of Doctor of Philosophy (Ph.D.) has been instituted with the object of encouraging advanced study and research. Candidates for this degree must have graduated at an approved University and will be required to pursue an approved course of advanced study or research in the University for a period of not less than two years, a portion of which (not exceeding one year) may be spent at some other approved Institution.

Facilities for Research.—In addition to the degrees which are more particularly awarded on approved results of research and advanced study, facilities are offered for advanced study and research, and special courses may be pursued in consultation with the Professor concerned in the following departments of the Faculties :—

Arts.—Classics, English and Modern Languages, Slavonic Languages, Iranian Languages, Semitic Languages, Oriental Studies, Egyptology, History, Archæology, Palæography, Economics, Geography, Philosophy, Architecture.

Science.—Mathematics, Physics (including Meteorology and Electrochemistry), Electrical, Civil and Mechanical Engineering, Chemistry, Crystallography, Metallurgy, Zoology, Botany, Agriculture, Geology, Pharmacology, Psychology.

Education.—The Administration and the Philosophy of Education; and special branches of investigation into Educational problems.

Medicine.—Anatomy, Physiology, Pharmacology, Pathology, Hygiene, Forensic Medicine and Toxicology, Medicine, Surgery, Obstetrics and Gynæcology, Public Health. Also in the special Departments of Laryngology, Otology, Ophthalmology, Diseases of Children, Diseases of Skin, etc.

Technology.—Mechanical Engineering, Electrical Engineering, Sanitary Engineering, Pure and Applied Physics, Applied Chemistry, Textile Industries, &c.

A number of research Fellowships and Studentships are offered which are open to foreign students:—including the John Harling Fellowships in Physics, value £125; the Vulcan Fellowship in Engineering, value £120; The Schunck Research Fellowship in Chemistry, value £100; The Edmund Roscoe Postgraduate Scholarship in History (British subjects), value £50; the Gartside Scholarship (British subjects), £80 a year whilst in England, £150 whilst in Europe, or £250 whilst in America; the Ashby Memorial Research Scholarship in Diseases of Children (Medical Practitioners) value £100; Graduate Bursaries in Education (the remission of fees for the Diploma Course); Jevons Studentship in Economics, value £90; Honorary Research Fellowships entitling the holders to the free use of facilities for research, are awarded to candidates who give evidence of having attained a high standard of learning and of being qualified to prosecute independently some special branch of study or research. Research Studentships are awarded to persons desirous of pursuing original research, on the recommendation of the Professor in whose department they propose to conduct their study. These Studentships enable the holders to pursue research and enjoy the facilities offered at greatly reduced fees.

Immediately before the war, during the Sessions 1912-13 and 1913-14, there were, on the average, 88 persons (either Research Fellows or Students) engaged on Research in the University. Nearly one-half of these were in the Department of Chemistry; but there were also students in the following departments:—English Literature, History, Latin, Education, Hebrew, Palæontology, Classics, French, Greek Testament, Hebrew Testament, Semitic Languages, Philosophy, Engineering, Zoology, Physics, Medicine, Botany, Pathology, Textile Industries, Anatomy, Economics, Metallurgy, Pharmacy, Public Health, Commerce, Electro-Chemistry, Psychology, Mathematics, Geology, Agricultural Zoology; in Technology as follows:—Applied Chemistry, Electrical Engineering, Sanitary Engineering, Electricity, Metallurgy.

Among special facilities for advanced study the following deserve mention:—

Libraries.—The University (Christie) Library (over 150,000 volumes) covers a wide range of subjects, and includes, among others, the private libraries of Professor Freeman, Professor Stanley Jevons and Dr. Christie. It also contains a valuable collection of scientific books and journals, and in this respect the University co-operates with the Manchester Literary and Philosophical Society, so that between them they include all the important scientific periodicals. There are, in addition, excellent Departmental Libraries, for example, in the Departments of Chemistry, Zoology, Public Health, and at the Municipal College of Technology (Faculty of Technology). The Medical Library of the Manchester Medical Society (over 42,000 volumes) is housed in the Medical School of the University, where it is available for medical students. The magnificently endowed John Rylands Library (nearly 250,000 volumes) includes the famous Althorp Library of the 2nd Earl Spencer and the Crawford collection of Oriental and Western manuscripts. It contains one of the most important collections of early printed books in existence, and is especially strong in Theology, History, Philosophy, Philology and Classics. It is always willing to purchase books required by students within its field of work. The ancient Chetham Library (70,000 volumes) includes valuable mediæval MSS, and is rich in the printed books of the 17th and 18th centuries, and in more

modern historical literature. The Municipal Reference Library (194,000 volumes) is valuable for books published during the last 100 years and for English periodicals.

Laboratories, &c.—All the scientific laboratories (including the large Departments of the Municipal College of Technology) are equipped for advanced study and research. Among the more special provisions may be mentioned those for Radio-activity, and Ionisation of Gases (physics) the Schunck Research Laboratory (chemistry), the Osborne Reynolds Laboratory (engineering), Agricultural Entomology (zoology), the Helen Swindells Research Laboratory for Cancer (pathology), and the Department of Public Health. The Fielden School is the University Demonstration School controlled by the University, affording special opportunities for research in Education. The Manchester Museum forms part of the University buildings, and is organised in connection with the Departments of Zoology, Botany and Geology. It also contains a valuable Egyptological collection consisting mainly of material collected by Professor Flinders Petrie.

Fees.—Admission and registration fees 1 guinea to 2 gs. a year. Average fees per session for courses:—B.A. £18; B.Sc., £20 to £30; B.Sc. Hons., £12 to £45; Law (total for the 3 yrs.), 13½ gs.; Commerce, 10 gs.; Theology £10; Technology, 20 gs.; Mus.B. £5 12*s.*; Mus. D., 15 gs.; M.B., Ch.B. composition fees: 1st M.B., £25, medical course 70 gs., payable in three yearly instalments; Hospital composition fees: Royal Infirmary, 40 gs.; St. Mary's Hospitals, 8 gs.; B.D.S., 60 gs.; Hospital fee, £130; L.D.S., 55 gs.; Hospital fee, £100 (20 gs. if approved instruction has been received from a registered dentist); Teacher's Diploma, £18. Degree fees: Bachelorship, 5 gs.; Mastership, £5 or £6; Doctorate, £10; L.D.S., 5 gs. Examination fees, 1 to 5 gs.

Research fees, 3 gs. per session in Arts, Theology and Education; 5 gs. to 9 gs. for specially elected research students; higher fees charged for other science students, but usually at a lower scale than those for normal undergraduate laboratory courses.

Hostels.—For men: Hulme Hall (Warden), 60 gs. per session; Dalton Hall (Principal), £90; Lister House, for medical students. For women: Ashburne Hall (Warden), 50 to 60 gs.; Langdale Hall (Warden), chiefly for women training students, whose fees are £23, private students, £48.

Vice-Chancellor:—Sir Henry A. Miers, M.A., D.Sc., Ph.D., F.R.S.

Registrar (to whom all inquiries should be addressed):—Edward Fiddes, M.A.

The College of Technology, Manchester.

The College of Technology is a constituent college in the University of Manchester. Its principal activities comprise the conduct of industrial research—generally in co-operation with firms engaged in the industries of South-East Lancashire—and the education of men who are to occupy positions of responsibility in the engineering, chemical, textile, mining, building and printing industries. The provision of University training is now rightly regarded as being just as essential for members of the higher staff of industrial concerns as for men who adopt more academic careers.

The present College buildings were completed in 1903, the value of the site, buildings and equipment exceeding £380,000. Recently a number of additions have been made to the equipment, including a complete laboratory for dyestuffs research. Extensions of the existing buildings are, however, urgently needed, and these are to be begun so soon as the war is over.

Undergraduate Courses.—Candidates for admission should, as a rule, have passed the Matriculation Examination, or one of the equivalent examinations recognised by the Joint Matriculation Board of the Northern Universities; but an alternative "Entrance Examination" is provided in order to avoid requiring such candidates as have been engaged in whole-time industrial employment

wasting valuable time on comparatively unimportant studies. The three years' undergraduate courses lead students who enter through the Matriculation Examination to the degree of Bachelor of Technical Science (B.Sc. Tech.).

Students who take the highest honours in the final examination, and have shown most promise during their three undergraduate years, are recommended to remain for another year of more advanced study and research. A thesis describing the further year's work may secure for them the higher degree of Master of Technical Science (M.Sc. Tech.). Candidates who are admitted through the Entrance (instead of through the Matriculation) Examination become entitled to the Certificate in Technology and the Certificate of Distinction in place of the Bachelor's and Master's degree.

Facilities for Research.—Courses of post-graduate and specialised study and research are offered for a fourth year to students who have successfully completed the three years' course for a degree or certificate, or are otherwise deemed competent to enter upon them.

One of the objects of the College is to advance technological science by conducting and publishing the results of original investigations, and this phase of its activities is probably the most important contribution which the College makes to industry.

The staff, and especially the senior staff, is selected primarily with the object of maintaining the research work at the highest possible standard in all the departments of industry which the College serves.

The research work is carried out partly as independent investigations by members of the staff, and as post-graduate work, but the chief and most important field of research is that which is of an industrial character, conducted in co-operation with firms engaged in the industries of South-East Lancashire, and with a number of technical and scientific organisations either separately or in conjunction with the new Government Department of Industrial and Scientific Research.

The equipment of the College is specially designed for the conduct of research and for advanced study. In cases where industrial processes are under investigation it is possible to carry out experiments on a Works' scale. The equipment provides special facilities for work in the following subjects:

Mechanical Engineering.—Design of Steam Boilers, Engines, Turbines, Condensing Plant, Gas Engines, Producer Plants, Refrigeration Plant, Machine Tools, and Hydraulic Machinery. Experimental work in Hydraulics and Motor Car Engineering. *Electrical Engineering.*—The design for Electrical Machinery, Testing Machines, High Tension Testing, Electrical Measuring Instruments, Illuminating. *Municipal and Sanitary Engineering. Applied Chemistry.*—General and Physical Chemistry, the Chemical Technology of Textile Fibres and Paper Manufacture, Metallurgy, India Rubber, Brewing, Baking and other fermentation industries, Fuels, Photographic Technology. *Coal Tar Chemistry and Dyestuffs Research. Textile Industries. Printing.*

The Governing Body of the College of Technology has for several years offered a number of research scholarships in Technology each of a value not exceeding £100, with fees remitted and tenable for one year, to be renewed under certain conditions for a second year.

The degree of Master of Technical Science may, under certain conditions, be conferred upon graduates of Universities other than Manchester, who can give sufficient evidence of their qualifications and have conducted research work approved by the Faculty of Technology during a period of two years in the University.

Fees.—Tuition fee for undergraduate courses, £21 per session; for research and post-graduate study, 9 gs. This fee may be remitted in special cases. and in cases where the research work involves the Governing Body in special cost (*e.g.*, for materials, labour, or power) the fee may be increased to cover this extra cost. Special industrial investigations may be undertaken at fees to be arranged.

The tuition fees per session payable by students other than research students and other than students proceeding to degrees or certificates in the Faculty of Technology are :—For Lectures, 1 hour per week, 2 gs.; 3 hours per week, 5 gs. For Laboratory, 3 hours per week, 5 gs.

The prospectus of University Courses and any information with regard to post-graduate study or research will be sent on application.

Principal :—J. C. Maxwell Garnett, M.A.

Registrar (to whom all inquiries should be addressed) :—H. Richardson, M.Sc.

UNIVERSITY OF OXFORD.

The ancient city of Oxford is situate at the confluence of the Thames and its tributary the Cherwell, which surround it on three sides, and afford the unrivalled facilities for river boating associated with the place. It is served by three railways, the Great Western, giving rapid communication with London (about 1¼ hours) and the West, the London and North Western by a branch line from Bletchley, and the Great Central, which gives direct communication with Leicestershire and Yorkshire.

The University and Colleges.—Although various legends of doubtful authenticity connect the beginnings of the University with the reign of Alfred the Great, it is from the latter half of the thirteenth century that Oxford as a University may be more legitimately dated. In this half century were founded University, Balliol, Merton and St. Edmund Hall, the library of Merton, built about 1376, being the oldest original library in the country. These were followed in the fourteenth century by Exeter, Oriel, Queen's, and New College, whose gardens are bounded on two sides by the old city wall. In the next century we have Lincoln, All Souls with its four undergraduates and some 50 Fellowships, and Magdalen on the Cherwell with natural and architectural beauties too numerous to specify. Brasenose, Corpus Christi, Christ Church, Trinity, St. John's and Jesus were founded in the sixteenth century. Of these Christ Church, the largest Society in Oxford, is a mixed foundation, the Governing Body consisting of the Dean and Canons of the Cathedral, together with the students (corresponding to Fellows) of the College. The remaining Societies in order of foundation are Wadham (1612), Pembroke (1624), Worcester (1714), Hertford (1874) though with a previous existence as Magdalen Hall, Keble (1870), and the Society of Non-Collegiate Students whose members, although belonging to no College or Hall, have all the privileges enjoyed by other student members of the University.

The Colleges are corporate bodies distinct from the University and not even, at all events not directly, subject to laws made by the University. The true connection between them and the University lies in the fact that the great majority of members of the University belong to Colleges, and that every member of a College must be a member of the University.

The University is a body corporate with all the usual powers of a corporation and with certain peculiar privileges, such as the right of exercising jurisdiction, civil and criminal, over its members, the right of returning two representatives to Parliament, the power of conferring degrees, &c.

It consisted in 1914 of some 4,000 undergraduates, the great majority of whom were in residence, and of some 11,000 graduates only a small proportion of whom were in residence. The government is in the hands of three bodies : (1) Convocation, consisting of all members of the University who have taken the degree of M.A., or D.D., or D.C.L., or D.M.; (2) Congregation, consisting mainly of the teaching and administrative elements of the University and Colleges; (3) the Hebdomadal Council, consisting of the Chancellor, the Vice-Chancellor, the Proctors, 18 members elected by Congregation, and the ex-Vice-Chancellor, or a Pro-Vice-Chancellor nominated by the Chancellor.

The Hebdomadal Council initiates legislation by statutes, which are promulgated, and may be amended or rejected in Congregation, and are finally approved (or rejected) by Convocation.

Faculties.—The teaching element of the University is organised in Faculties, of which there are at present eight. Each Faculty is represented by a separate Board consisting of the Professors in the Faculty *ex officio*, a corresponding number of elected members, and usually a proportion of co-opted members. The Boards control the subjects of examination in their respective branches of study, issue terminal lists of lectures, and have other duties, chiefly in connection with the admission, superintendence, and examination of Research Students. The General Board of the Faculties administers the "Faculties Fund" for the educational needs of the University, and for the encouragement of advanced study. It has also power to initiate legislation concerning Studies and Examinations after consultation with the Board of the Faculty concerned.

Degrees.—1. B.A. *Conditions.*—(1) Residence for 9 terms (3 years); (2) The passing of three Examinations, viz.: (*a*) Responsions, an examination in Latin, Greek, and Elementary Mathematics. (*b*) The First Public Examination, which includes (i) an Examination in Holy Scripture and (ii) either an Examination for Honours in Greek and Latin Literature, or an Examination for Honours in Mathematics, or a Pass Examination in Greek and Latin and in Mathematics or Logic. Candidates taking a Final Honour School may, however, substitute for part (ii) one of the Preliminary Examinations in Law, Natural Science, Modern History, or Modern Languages. (*c*) The Second Public Examination, which consists of an Honour School and a Pass School, either of which may be taken, and in each of which there is a very wide choice of subjects.

2. B.Litt. and B.Sc.—These are research degrees open either to graduates of the University or to persons who have graduated at another approved university or can give satisfactory evidence of a good general education. Candidates select their own subject of special study or research but must satisfy the Board of the Faculty to which their subject belongs that the subject is a suitable one and that they are well qualified for advanced study in it. The fees are £5 on admission, £5 on completion of the course and application for the appointment of Examiners, and £7 10s. on taking the degree. A supervision fee of £2, or in exceptional cases £4, per term may be, and frequently is, imposed. The minimum length of the course is one year, the necessary residence for the degree is six terms (2 years). Applications for admission should be made, through a College, to the Assistant Registrar.

3. D.Phil.—This is a new research degree instituted in 1917. It is of a considerably higher standard than the B.Litt. or B.Sc., and is open to members of the University who have taken high honours or given other satisfactory evidence of fitness, and to graduates of other approved universities who are not less than 22 years of age and have pursued a course of study extending over four years at their previous university and can satisfy the Committee for Advanced Studies of their fitness to engage in research. The course of study lasts three years, or in exceptional cases two years, and the candidate is examined both *viva voce*, and (usually) by a written examination, on the subject of his dissertation and on relevant subjects. The dissertation must constitute an original contribution to knowledge, and must be set forth in a manner fit for publication *in extenso*. The fees are £5 on admission, £6 per term during the course, £5 on application for examination, and £15 on taking the degree. Applications for admission or information should be made to the Assistant Registrar.

4. B.C.L.—The degree of Bachelor of Civil Law is open to graduates of the University, and to graduates of other universities who can satisfy the Board of the Faculty of Law that they are well qualified to pursue an advanced course of legal study. The course for the latter class of candidates lasts for

five terms, and leads to an Honours Examination, in which the successful candidates are placed in classes. The minimum residence required is six terms (2 years). There is a fee of £5 on admission and the degree fee is £8. Applications for admission should be made to the Assistant Registrar.

5. B.Mus. and D.Mus.—Candidates for the degree of Bachelor of Music are required to pass Responsions or an equivalent Examination or the Preliminary Examination for Students of Music (English and two other languages); to pass two Examinations in Music and to submit a Musical Exercise for approval; to pass one of the subjects of the Final Pass School (Ancient History and Philosophy, French, German, or English literature); and to have pursued at Oxford or elsewhere an approved course of musical study extending over two years. The Examination fees amount altogether to £8 7*s.*, and the degree fee is £10. For the Doctorate, which is only open to Bachelors of Music, there is one examination and a Musical Exercise. The fees are £8 in all, and the degree fee £25. No residence is necessary for either degree.

6. The remaining degrees are only open to members of the University who have already taken some other degree. They are M.A. (open only to holders of B.A. degree); D.Litt. and D.Sc. (open only to those who already possess the M.A., B.Litt., or B.Sc.); B.M. (holders of B.A. degree only); B.D. (holders of M.A. degree only); M.Ch. (holders of B.M. degree only); D.D. (holders of B.D. degree only; D.C.L. (holders of B.C.L. degree only); D.M. (holders of B.M. degree only).

University and College Teaching.—The University teaching staff includes normally about 60 Professors, 18 Readers, 45 Lecturers and Demonstrators, 6 Heads of Departments who give lectures or informal instruction, and some 30 Junior Demonstrators, but there is in addition the very large body of College Tutors and Lecturers who hold no definite University appointment. The whole of the University staff and many members of College staffs are prepared to give advice and assistance in their own special subjects to students coming to Oxford with a view to advanced study. Many of the lectures given for the Final Honour Schools are of a special and advanced character, but provision is also being made for courses intended particularly for those who come up definitely with a view to research. The Committee for Advanced Studies hopes to be able to publish annually a full account of the facilities for research which may be expected at Oxford in normal times, but it will readily be realised that in a national emergency, such as exists at present, conditions are very far from being normal.

With so long a history behind it, it is natural to find Oxford rich in libraries and collections, and recent benefactions have made extensive additions to its Laboratories.

Libraries.—1. The Bodleian Library, founded in 1602, contains over 800,000 bound volumes of printed works, comprising about 1,700,000 separate literary pieces, some 40,000 bound volumes of MSS., and about 20,000 separate charters and rolls. Undergraduates are admitted for study on a recommendation from their tutor. 2. The Radcliffe Library contains a very large collection of English and foreign books and periodicals relating to Mathematics, Natural Science, and Medicine. 3. The Codrington Library, All Souls, is especially rich in works on Modern History and Law. 4. The Maitland Library, All Souls, is intended to assist research in Social and Legal History 5. The Taylorian Library contains over 50,000 volumes, comprising the chief philological, literary, and historical works of the principal European languages 6. The Library of the English School contains the whole of the late Professor Napier's philological library, and a valuable collection of works on literature. 7. The Library of the Indian Institute contains facilities for the study of all Indian and allied languages and institutions. There is also a good collection of maps and official publications, and of Sanskrit and Persian MSS. 8. Among other libraries may be mentioned the Beit Library of Colonial History, the Geographical Library and map room, the Tylor Anthropological Librar

the Hope Library of Entomology, the Botanical Library, the Archæological and Art Library, and the various College Libraries, many of which contain works of great value.

Collections.—1. The Ashmolean Museum of Art and Archæology, containing many interesting and sometimes unique collections of Prehistoric, Classical, Egyptian and Oriental, Anglo-Saxon, Mediæval, and Local Antiquities, of Marbles, Sculptures, and Inscriptions, and of original drawings and paintings and other works of art. 2. The Pitt-Rivers Museum of Anthropology, arranged to show the developmental history of the various material arts. 3. The Zoological, Mineralogical, Geological, Palæontological, Petrological, Entomological, Botanical, Anatomical, and Pathological Collections, associated with the work of the various Scientific Departments, some of which are of wide range and great value.

Laboratories.—Physics: The Clarendon Laboratory, which is particularly rich in optical apparatus; the Electrical Laboratory, built in 1910. Chemistry: The University Laboratory, completed in 1916, and Laboratories at Christ Church, Magdalen, Balliol, Jesus, and Queen's. Zoology: The Laboratory of Zoology and Comparative Anatomy; the Hope Department of Entomology. Botany: The Botanic Garden and Laboratory. The University Laboratories of Geology; Mineralogy; Engineering Science; Physiology; Human Anatomy; Pathology; Pharmacology. The School of Rural Economy. The School of Forestry.

Diplomas and Certificates.—In addition to the degree courses, Diplomas or Certificates are awarded, usually after a definite course of study followed by an Examination, in the following subjects:—Geography, Education, Theology, Economics and Political Science, Anthropology, Forestry, Classical Archæology, Rural Economy, Military History and Tactics, Public Health, Ophthalmology, French, and German.

Expenses.—It is difficult to make any general statement of the cost of a University course, which varies at different Colleges, and depends upon the student's own means and tastes. Perhaps the total cost of living in College might be estimated at between £35 and £45 a term for a man who exercises reasonable care in his expenditure. At Keble there is a fixed annual charge of £85, covering tuition, rent of furnished rooms, board, University and College dues, and service. The necessary expenses of a Non-Collegiate Student have been estimated at between £50 and £60 a year.

Admission to membership of the University ("Matriculation") follows upon admission to a College or Hall, or to the Society of Non-Collegiate Students. Application for admission must therefore be addressed to one of these Societies. The University itself holds no entrance Examination, but each Society has its own conditions of admission which may, and usually do, involve an Examination.

Scholarships and Exhibitions.—Open Scholarships and Exhibitions are awarded by the various Colleges after competitive examinations. Scholarships are usually of the annual value of £80, and in most cases candidates must be under 19 years of age. Exhibitions are generally of less value, the limit of age is often extended, and they are frequently confined to persons in need of pecuniary assistance. Announcements of the Scholarships to be offered are made in the University Gazette some six months or more before the Examinations.

Social Life.—Each College forms a little Society of its own, divided up, no doubt, into sets of men attracted together by similar interests, but all united in membership of and affection for the College, and ungrudging in their recognition of deeds that bring credit to it, be they in the Schools, on the river, on the playing fields, or, as now, on the sterner field of war. In fact, the College feeling is, perhaps, the strongest trait of Oxford life. Yet there is much extra-collegiate intercourse. The Union Society with its weekly

debates, the various undergraduate clubs, such as "Vincent's," the University Contingent of the Officers' Training Corps, the frequent meetings in friendly rivalry between College teams, and the opportunities for hospitality afforded by the Oxford habit of having all meals, except dinner, in the men's own rooms, all tend to encourage a wider comradeship.

Each College has its own ground laid out for cricket, football, hockey and lawn tennis, and each arranges a programme for the term involving many friendly games with other Colleges, in addition to the more serious business of the Inter-collegiate Cup Ties, of which the Finals and Semi-Finals used to produce scenes of the most frantic excitement, not always confined to the younger members of the competing Societies. But there are, in addition the University Clubs, rowing, cricket, both kinds of football, athletics, hockey, lawn tennis, &c., &c. A man who comes up with any kind of reputation for games is sure of a good trial in the various freshmen's and other trial games, and, if he fail there, he will get another later on, if successful for his College.

Two great festivals occur (or used to occur—may they soon recur!) in the Summer Term: the "Eights week," when the College bumping races take place on the Isis, and all Oxford forgets for a few delirious days that it is a place of learning and that "Schools" are rapidly approaching, and Commemoration Week, the week after the end of term, a week given over to balls and water parties, with the quaint old ceremonies of the Encænia in its midst to remind us of the University.

Privileges on account of War Service.—The University has endeavoured, by a number of decrees, to make provision for those whose academical course has been interrupted or postponed by War Service. The general effect of the decrees is to shorten permissively the period of residence necessary for a degree by from one to four Terms; to exempt from one of the three Examinations necessary for the B.A. degree; to enable candidates for Honours to enter for their Final School without passing any previous examinations; to provide shortened Honours Courses leading to the B.A. degree; and to extend the time within which candidates for Honours must take their Schools. Illustrations of the applications of these principles may be given, *e.g.*, a man who has served in either H.M. Forces or in those of our Allies for one year, would be qualified to obtain the B.Litt. degree, on fulfilment of the other conditions, after a residence of one instead of two years. A student who has served for 1½ years and who wishes to take an Honours course, would be entitled to enter for an Honour School, without passing any previous examination, at the end of either the first or second year, and could complete the necessary residence in the period between the beginning of one year and the summer of the succeeding year. Moreover, he could substitute, if he chose, for the full Honours course a shortened course, leading equally to the degree. Copies of the decrees may be obtained by or for actual or intending members of the University on application to the Assistant Registrar.

Women Students.—Although women are not eligible for matriculation or for degrees, they are admitted to almost all the University examinations, under conditions laid down by the Delegacy for Women Students and approved by Convocation. There are five recognised Societies for women students, viz., Lady Margaret Hall, Somerville College, St. Hugh's College, St. Hilda's Hall, and the Society of Oxford Home Students.

Official Publications.—Statuta et Decreta Universitatis Oxoniensis, 5*s*. Examination Statutes containing all the Statutes and Regulations affecting courses of study and examinations, published annually, 2*s*. The Oxford University Calendar, containing the names of all officers and members of the University and Colleges, with the Honours of each year since 1900, annually, 6*s*. The Responsions Pamphlet, giving in detail the regulations for Responsions, with the dates of examination, and a complete list of exemptions, annually in June, 6*d*. A Pamphlet of General Information, giving

details of Admission, Residence, Entrance Scholarships, Expenses, and the Examinations for the B.A. degree, 6*d.*; The Oxford University Handbook, 2*s.* 6*d.*

These books are published by the Clarendon Press, and can be obtained at the Depository, 116, High Street, Oxford or (through any bookseller) from the Oxford University Press, Amen Corner, London, E.C., or from the branches or agents in Edinburgh, Glasgow, New York, Toronto, Melbourne, Sydney, Cape Town, Bombay, Madras, and Shanghai.

Chancellor :—Earl Curzon of Kedleston, D.C.L., All Souls.

Vice-Chancellor (1917–18) :—H. E. D. Blakiston, D.D., President of Trinity.

Registrar (to whom inquiries should be addressed, except where otherwise stated) :—C. Leudesdorf, M.A., Pemb.

(Applications for admission to a College should be addressed to the Head of the College.)

UNIVERSITY OF ST. ANDREWS.

The University of St. Andrews was founded in 1411. In 1747 St. Salvator's College (1450) and St. Leonard's College (1512) were united under the title of "The United College of St. Salvator and St. Leonard." St. Mary's College (1537) has since 1579 been restricted to the teaching of Theology. University College, Dundee (1880), was affiliated to and made to form part of the University in 1897.

St. Andrews with its bracing climate has the reputation of being the healthiest town in Scotland. A seaport, made a royal burgh in 1140, it has interesting historical surroundings, and contains the ruins of a cathedral, two monasteries, and a bishop's palace or castle on a rock overhanging the sea. It has also four fine public golfcourses, and is the headquarters of the Royal and Ancient Club (founded 1754).

Dundee is the most important centre in the world for the manufacture of fabrics made from jute.

Library, Museums, etc.—The general University Library dates from 1610. In the middle of the eighteenth century the libraries of the three Colleges were transferred to it, and it now contains 160,000 printed volumes (some of the fifteenth and sixteenth centuries), also a number of MSS., including very fine Persian specimens and a large folio Antiphonarium. There is a separate College Library at Dundee. There are also various class libraries. The University museums at St. Andrews include collections in Natural History, Anthropology, Botany, Geology and Mineralogy, Ethnology, Zoology, and Anatomy. Laboratories: In United College new Chemical Research Laboratory, Gatty Marine Laboratory, Laboratories for Chemistry, Physics, Zoology, Botany, Geology, Anatomy, Anthropology, Embryology and Physiology. There are also an agricultural experiment and demonstration area and laboratories for research work in Agricultural Chemistry and Agricultural Biology, an Agricultural museum and a Botanical garden with range of glasshouses, and a room for research work in Botany.

University College, Dundee, has Geology, Natural History, and Medical museums; special laboratories and opportunities for research in Mathematics, Natural Philosophy, Chemistry, Engineering (Electrical, Hydraulic, and Mechanical), Physiology, Materia Medica, Bacteriology, Botany, and Natural History, Comparative Anatomy, Anthropology, and Embryology.

Faculties.—Arts; Science (including Agriculture and Engineering); Divinity; Medicine (including Public Health).

Degrees and Diplomas.—M.A. (3 years), B.Phil., B.Litt., D.Phil., D.Litt.; B.Sc. (3 years in Pure or Applied Science), D.Sc., B.Sc. in Engineering (3 years), D.Sc. in Engineering; B.D. (3 years), Hon. D.D.; Hon. LL.D.; M.B., Ch.B. (5 years), M.D., Ch.M. Diplomas in Public Health (6 months), and Dentistry (4 years), L.L.A. Diploma for women (on examination).

Part of the study for every degree must have been taken in the University; but for the M.A., B.Sc., and M.B., Ch.B. degrees attendance at another university (at home or abroad) may be recognised. The D.Phil., D.Litt., and D.Sc. Degrees are granted on theses, and graduates of other universities, after two years' study at St. Andrews as Research Students, may be candidates. The M.D., and the Ch.M. are open only to St. Andrews Medical graduates. The B.Litt. and B.Phil. are open only to Arts graduates of the University. The B.D. is open to graduates in Arts—St. Andrews Arts graduates may take the Theological curriculum elsewhere, but others must attend the curriculum at St. Andrews. For the Dental Diploma two years at least must be taken at Dundee. For the Public Health Diploma, St. Andrews Medical graduates may study elsewhere, graduates of other universities must attend at Dundee at least 4 months.

Scholarships.—The Entrance Bursary Competition is open to all students. There are, in addition, a number of Bursaries for women Medical students.

At St. Andrews special prominence is given to Classics, Philosophy, History, Modern Languages, Political Economy, Mathematics, Natural Philosophy, Chemistry, Zoology, Botany, Anatomy, and Physiology. At Dundee to Medical studies, Arts subjects, Zoology, Chemistry, Botany, Mathematics, Natural Philosophy, and Engineering. Medical studies, after the first two years, are taken solely in Dundee, where clinical instruction, in the Infirmary, Asylum, Eye Institution, &c., is available.

Facilities for Research. — The Chemistry Research Laboratories in St. Andrews are exceptionally large and well equipped. They can accommodate about 40 research workers. The Gatty Marine Laboratory affords facilities for research in Marine Zoology. Research work is provided for in Chemistry, Natural Philosophy, Botany, Anatomy, and Physiology at St. Andrews and Dundee, and in the various branches of Medical study, in Engineering and in Electrical Engineering at Dundee. Research in Agriculture can be carried on at St. Andrews.

Fees.—Inclusive tuition fees covering a specified number of courses:—M.A., 30 gs.; Hons., 40 gs.; B.Sc., 60 gs.; B.L., 22 gs.; LL.B., 30 gs.; M.B., Ch.B., 130 gs.; for combined courses:—M.A. and B.Sc., 75 gs.; M.A. and LL.B., 50 gs.; M.A. and B.L., 45 gs.; M.A., and M.B., Ch.B., 145 gs.; M.A., B.Sc., and M.B., Ch.B., 160 gs.; B.Sc. and M.B., Ch.B., 150 gs. (The inclusive fees for medical courses do not cover the fees for hospital ticket, or cases of labour, or laboratory fees for use of apparatus, &c.) Matriculation, 1 guinea per annum. Maximum fee for research students, 5 gs. a term. Degree fees:—M.A., 5 gs.; B.Sc., 6 gs.; M.B., Ch.B., 22 gs.; B.D., 5 gs.; B.Phil. or B.Litt., 6 gs.; Doctorates in Arts or Science, 10 gs.; M.D. or Ch.M., 15 gs.; and in every case a registration fee of £1 on admission as a graduate for the first time. D.P.H., 10 gs.; L.D.S., 10 gs.

Halls of Residence.—University Hall for Women (Warden) at St. Andrews, £48 and upwards per annum, exclusive of tuition fees. Hostel for Women Students, Dundee (Warden), £40 per annum. No hostels for Men Students.

Recreation and Athletics.—A large recreation park is held for the St. Andrews students; there is at St. Andrews a fine University gymnasium with baths and instructors, and the golf links are public. In Dundee, gymnasium, fives court, &c.

A Men Students' Union and a Women Students' Union, a common dining hall for men students, and several social and literary and scientific societies at St. Andrews. A Students' Union and several social, literary, and scientific societies at Dundee.

Number of Professors and other Teachers (at St. Andrews and Dundee)—93.

Number of Students—488; (194 women). Research, 20 (6 women).

Official Publications.—The Calendar, published June, *2s. 10d.*, Calendar of University College, Dundee, *6d.*; Leaflets containing Regulations, free.

Vice-Chancellor and Principal :—The Very Rev. Sir John Herkless, D.D.
Secretary :—A. Bennett.

UNIVERSITY OF SHEFFIELD.

The University of Sheffield was founded by Royal Charter May 31st, 1905. The Departments of Arts, Pure Science, Medicine, and Law are housed in the buildings which were opened in July, 1905. These buildings face Western Bank, and are about a quarter of an hour's walk from the centre of the city. The work of the Applied Science Department, comprising Engineering, Metallurgy, Coal Mining and Glass Technology, is carried on in a building erected on the site of the old Technical School, about five minutes' walk from the main building.

Sheffield is situate in the extreme south of Yorkshire, and is very near to the Derbyshire moors. It enjoys a healthy, bracing climate, and is within easy reach of the beautiful scenery of the Peak district of Derbyshire.

Sheffield is the centre of industry for the manufacture of steel and for silver, electro-plate and cutlery. Further, it is in the heart of the area containing the coalfields of South Yorkshire, North Derbyshire and Nottinghamshire. The University has naturally turned its attention to the special needs of the locality, and sought out ways in which science might aid industry. Students in the departments of Engineering and Metallurgy have ample opportunity of gaining a practical as well as a theoretical knowledge. South Yorkshire is one of the chief seats of the British Glass Industry, and a new Department of Glass Technology has just been opened.

Libraries.—The Edgar Allen Library is the principal University Library; it contains about 52,000 volumes and pamphlets, including about 500 volumes of English, Scottish and Irish Record Publications, Reports of the Historical MSS. Commission, and similar series, and the *Challenger* Reports. Medical students have also access to the large and valuable collection of books, belonging to the Sheffield Medico-Chirurgical Society. At the Applied Science Department there is a reference library, and the Department of Glass Technology is provided with a library containing the best modern literature on Glass.

The University Observatory is situate in the Park close by the Physical Laboratory.

In co-operation with the University of Leeds, the University has acquired a small Marine Zoological Laboratory at Robin Hood's Bay.

Faculties.—Arts, Pure Science, Medicine, Law, Engineering and Metallurgy.

There are abundant facilities for Hospital Practice in the Sheffield Royal Infirmary, the Sheffield Royal Hospital, the Jessop Hospital for Women, the South Yorkshire Asylum and the Hospitals for Infectious Diseases.

The Faculty of Engineering includes the Departments of Mechanical Engineering, Electrical Engineering, Civil Engineering, Chemical Engineering, Mining, Applied Chemistry, Building, Glass Technology and Refractories. The Department is recognised by the Marine Department of the Board of Trade as suitable for the training of marine engineers. The Electrical Engineering Department possesses five electro-technical laboratories and a central station equipment.

In the Mining Department a course has been arranged for students who wish to obtain University instruction concurrently with practical experience at a colliery. The Diploma in Mining enables a student to sit for the examination for a colliery manager's certificate after five years' total training, including the time spent at the University.

The new buildings erected for the Department of Glass Technology form a model factory, with a complete equipment for dealing with the scientific manufacture of glass on a commercial scale.

In the Faculty of Metallurgy there are a Ferrous Department and a Non-Ferrous Department. The foundries are equipped on a commercial scale, and the laboratories are fitted for every branch of metallurgical research work. A magnetic laboratory and installations for the comparative testing of pyrometers have been fitted up. The equipment is the most complete of its kind for teaching the practical manufacture, the chemical constitution and the physical properties of steel. The Non-Ferrous Department has been established to meet the needs of the lighter Sheffield trades of silver, electroplate, brass and allied industries. It is completely equipped for dealing with every phase of the work from the raw material.

The department of Education is primarily concerned with the training of Teachers. The work is largely postgraduate. Emphasis is given to training in the spirit and methods of pedagogical research, for which special facilities are afforded.

Degrees and Diplomas.—The following degrees are awarded by the University:—Faculty of Arts: B.A., M.A., Litt.D. Faculty of Pure Science: B.Sc., M.Sc., D.Sc. Faculty of Medicine: M.B., Ch.B., M.D., Ch.M. Faculty of Law: LL.B., LL.M., LL.D. Faculty of Engineering: B.Eng., M.Eng., D.Eng. Faculty of Metallurgy: B.Met., M.Met., D.Met.

Diplomas in Education, Modern Language Teaching, Architecture, Mining, Glass Technology; and Associateships in Engineering, in Iron and Steel Metallurgy, and in Non-Ferrous Metallurgy.

Fees.—The approximate cost of each complete degree course is as follows: for B.A. about £55; B.Sc. about £75; LL.B. about £40; B.Eng. about £80; B.Met. about £80. In addition there is a fee of £1 payable for the Intermediate Examination and for the Final Examination in each case, and a further £5 on proceeding to the degree. For M.B., Ch.B about £138. In addition there is a fee of £5, payable on entrance for each of the First, Second and Third Examinations.

Hostels.—Stephenson Hall, intended primarily for students who are preparing for Holy Orders in the Church of England; but other students are admitted under certain conditions. Fees range from £30 to £60. The University Hostel for Women; fees range from 32 gs. to 46 gs.

Lodgings in the neighbourhood of the University are approved by the University authorities, and visited by the supervisor of lodgings.

Recreation and Athletics.—The University Athletics Ground, 15½ acres in area, provides for cricket, lawn tennis, Rugby football, Association football, men's hockey, women's hockey. The Students' Representative Council is responsible for the social life of the University. There are many student societies.

Official Publication.—The Calendar.

Vice-Chancellor:—Professor W. Ripper, D.Eng., D.Sc., M.Inst.C.E., C.H.

Registrar (to whom all inquiries should be addressed):—W. M. Gibbons, M.A.

PRIFYSGOL CYMRU. UNIVERSITY OF WALES.

The University of Wales was founded by Charter, November 20, 1893; it received a Supplemental Charter, August 15, 1906. There are three Constituent Colleges: the University College of Wales, Aberystwyth; the University College of North Wales, Bangor; and the University College of South Wales and Monmouthshire, Cardiff.

The University has no teaching staff, the teaching being undertaken by the Colleges. The University awards initial degrees to students of the Colleges on conditions prescribed by it, approves but does not originate the courses of study qualifying for such degrees, and conducts examinations upon them. The Colleges are independent bodies with separate charters and government.

Faculties and Degrees.—The Faculties in which degrees are awarded are:—Arts or Letters, degrees of B.A., M.A., D.Litt. Science (including Applied Science), degrees of B.Sc., M.Sc., and D.Sc. Music, degrees of B.Mus., M.Mus., D.Mus. Law, degrees of LL.B., LL.M., LL.D. Medicine, degree of M.B. and B.Ch. Divinity, degrees of B.D., D.D.

The minimum period of study for the degree of *Baccalaureus* is three years. In the Faculty of Music the third year may be in an approved College of Music other than a Constituent College. The degree in Medicine is only open to a graduate in Arts or Science of some British or approved colonial or foreign university; the period of qualification for the medical degree is six years, of which the last three may be spent, not in one of the Constituent Colleges, but in an approved School of Medicine in the United Kingdom or in one of the Universities of Paris, Berlin, Vienna, or the Johns Hopkins University. The degree of B.D. is postgraduate; the Constituent Colleges are precluded by their Charters from teaching Theology, and the scheme of study for the B.D. is pursued at one of the following Associated Colleges:—The Theological College, Aberystwyth; the Theological College, Bala; the Memorial College, Brecon; the Presbyterian College, Carmarthen; the Baptist College, Cardiff; the Baptist and Congregational Joint School of University Theological Studies, Bangor; or the Affiliated College, St. David's, Lampeter; or, for graduates of the University of Wales only, Mansfield College, Oxford.

The degrees of M.A., M.Sc., and LL.M. may be awarded as initial degrees in the University to graduates of another university approved for this purpose who pursue a scheme of research for at least two years in one of the Constituent Colleges.

A Certificate in Law, a postgraduate Certificate and Diploma in Education and a Diploma in Public Health are awarded by the University.

Fees.—Matriculation, £2, (no fee for a graduate of another university); specified fees for examinations qualifying for the degree of *Baccalaureus*, amounting to a total of between £6 and £7; for examination for the degree of *Magister*, £8; for examination for the degree of *Doctor*, £16.

Official Publications.—Calendar, 1*s.* 6*d.*; Courses of Study in Arts, Science, Law, and Music, 6*d.*; in Divinity and Medicine, free; Matriculation Regulations, Matriculation Examination Pass Lists, free; Degree Regulations and Pass Lists, free; Matriculation Examination Papers, 3*d.* per set; Degree Examination Papers, complete set, 2*s.*, Arts and Law, 1*s.*; Mathematics, Science, and Music, 1*s.*; Divinity, 3*d.*; single subjects, 3*d.*; Record of Examinations passed by Students in any Year, 2*d.*

Vice-Chancellor (1917–18):—Sir Harry R. Reichel, M.A., LL.D.

Registrar:—J. Mortimer Angus, M.A., University Registry, Cathays Park, Cardiff.

The administrative building is the University Registry, Cathays Park, Cardiff.

University College of Wales, Aberystwyth.

The College is one of the three Constituent Colleges of the University of Wales. It was founded in 1872.

Aberystwyth is a watering place situate in the centre of Cardigan Bay and facing the south-west. It has the ruins of a castle built by Edward I., which are adjacent to the College. The climate is mild and equable in winter. The main College building and the Hostels for men and women students are situate on the sea front.

The National Library of Wales, founded in 1905, has recently been opened to students. It is one of the six British libraries which enjoys the privilege, under the Copyright Acts, of claiming a copy of every book published in Great Britain. It contains 250,000 books, and is especially strong in Welsh and Celtic books and manuscripts.

Libraries, Museums, etc.—The College reference and departmental libraries have about 35,000 books, including the library of the late Sir John Rhys, Professor of Celtic at Oxford. There are departmental libraries in Chemistry, Botany, Zoology, Geology, and Geography. The general museum, which has recently received an endowment of £5,000, has a good collection of Archæological and Ethnographical specimens, as well as a few valuable paintings and drawings. The departmental museum in Geology is very well equipped, and there are also museums in the departments of Chemistry, Botany, Zoology, and Geography. The Chemistry Laboratories were erected in 1907 and are the most complete in the Principality. Much research work is being carried on.

Departments.—Arts, Science, Law, Agriculture, Training of Teachers (Elementary and Secondary). A Chair in Geography and Anthropology has recently been endowed.

Degrees.—Students work for the degrees of the University of Wales. Graduates of British or Colonial Universities may be admitted to degrees in Arts, Science, or Law in recognition of original research. Two years' residence is compulsory, but candidates can proceed to the Doctorate without further residence. *Diplomas.*—Associateship of the College; Associateship in Agriculture; Diploma in Dairying; Certificate in Geography.

Special prominence is given to the study of the Welsh and Celtic Languages, Colonial History, Geography and research work is encouraged in all the Arts Departments. The departments of Chemistry, Geology, and Botany are also well equipped for research purposes.

Owing to the proximity of the National Library of Wales there are exceptional facilities for research on the Arts side.

Scholarships are open to colonial and foreign students.

Expenses.—(i) Composition fee for tuition, &c.: Degree Students: Arts, £13 per session; Science, £17 per session. Research Students: Arts, 5 gs.; Science, 8 gs. (ii) Board and Lodging: women's Hostel, £40 to £60 per session; men's Hostel, £35 to £40 per session.

Residence in the College for one session is recognised by most of the British Medical Schools as equivalent to a year's course. Graduates proceeding from the College to Oxford or Cambridge are also allowed certain privileges.

Recreation and Athletics.—The College possesses a 12-acre field for recreation and a well-furnished modern gymnasium. All forms of athletics are encouraged. There are numerous College societies which afford opportunity for social intercourse.

Number of Professors and other Teachers in Departments recognised by the University—53.

Number of Degree and Diploma Students—431 (172 women).

Official Publications.—The Calendar, Jan., 1*s.* 6*d.*

Principal:—T. F. Roberts, M.A., LL.D.

Registrar (to whom inquiries should be addressed):—J. H. Davies, M.A.

University College of North Wales, Bangor.

Bangor is a cathedral city, on the Menai Straits, surrounded by the beautiful Snowdonian scenery. Slate is quarried for export. There are five Colleges in the city, viz., University College, two theological seminaries and two for training of elementary teachers.

The physics and chemistry buildings and the biology laboratory were opened in 1885; in 1891-2 the chemistry and biology laboratories were extended to provide for zoology and agriculture. In 1911 the Arts department was removed to a site, in the heart of the city, of over 10 acres, given by the Corporation, leaving more room on the old ground for the Science departments,

including agriculture and forestry, botany and zoology. The foundation stone of the new buildings was laid in July, 1907, by King Edward, the present King being then Chancellor of the University. The buildings, except the Great Hall, which has since been presented, were completed at the end of 1910 and opened in 1911. It is intended, as soon as the war is over, to erect new Science buildings as a memorial to the men of North Wales who have fallen in the war.

Library, Museums, etc.—The library contains 55,000 volumes, including the Welsh library (15,000). It is hoped to make the latter a complete collection of printed matter relating to Wales and the Borders. The museum includes departments of Zoology and Ethnology, Geology, Welsh, Classical and Oriental Archæology, General History. The Zoology portion contains a collection made by Prof. P. J. White of fish, shellfish and fishing gear. Investigations are carried out and instruction is given in connection with the fishing industry. The college farm (675 acres), at which stock-breeding is a special feature, is at Aber, 5 miles from Bangor. There is also a Dairy School near Denbigh under the management of the College.

Departments.—Arts, Science, Agriculture (including Forestry), Electrical Engineering, Training of Teachers.

Subjects of study to which special prominence is given: Welsh Language, Literature and History, Agriculture, Horticulture, Forestry, Studies preparatory to a Theological degree, Application of Mathematics to Aeronautics, diplomas in Agriculture (2 years), and Forestry (2 years).

Facilities for Research.—Postgraduate Fellowships and Scholarships are available, varying from £30 to £125 a year. The ordinary entrance scholarships (for undergraduate courses) are mostly open to colonial and foreign students. Examination in April, for entrance in October. The postgraduate awards are, in most cases, restricted to students who have been for three years at the College.

Fees.—Registration, 1 guinea per session. Composition tuition fees, per session: Arts, £12; Science, £16; Medicine, 1st year (including laboratory), £16; Postgraduate courses, non-laboratory, 4 gs. a session; with laboratory, 7 gs.; Agriculture, degree and diploma course, composition fee, £16 a session; Farm Practical Instruction, £5 a session, or 2 gs. a term; Special Course in Agriculture in winter and spring terms, 5½ gs. a term.

Clubs and Societies.—17*s.* 6*d.* per annum for men, 15*s.* for women. Apparatus fee in chemical laboratory.

Halls of Residence.—Hostel for men, "Plas Menai" (Warden), £35 per annum; University Hall for women (Warden).

Recreation and Athletics.—College playing-field for football, cricket, tennis and hockey; boating on Straits; Choral Society; Debating Society; Welsh Society; annual athletic sports; conversaziones and entertainments managed by students.

Number of Professors and other Teachers in Departments recognised by the University—54.

Number of Students—312 (96 women).

Official Publications.—Calendar, September, 1*s.* 6*d.*; College Magazine, once a term, 6*d.*; Students' Handbook (S.R.C.), at beginning of each session, 1*s.*

Principal:—Sir Harry R. Reichel, M.A., LL.D.

Registrar:—J. E. Lloyd, M.A.

Correspondent for foreign students:—Prof. O. H. Fynes-Clinton, M.A.

University College of South Wales and Monmouthshire, Cardiff.

Cardiff, in which the College is located, is a seaport town on the northern coast of the Bristol Channel, standing at the mouths of the Taff, Rhymney

and Ely rivers. Its accessible position at the foot of the Welsh hills, with excellent communications in all directions, and in close proximity to the South Wales coalfield, although outside the actual mining area, renders it particularly attractive not only as a residential centre, but in many other respects. The climate is mild, without extremes of temperature.

As the natural outlet for the production of a large part of the South Wales coalfield, it is the largest coal-shipping port in the world, and the centre of important manufacturing and distributing industries. It possesses four well-equipped docks, under the control of the Cardiff Railway Company, the total water area of which is about 160 acres; shipyards; large engineering, iron and steel, and milling works; and a staple branch of industry is that of the importation and distribution of timber. Important neighbouring docks are those of Barry, Penarth and Newport.

Its history can be traced back at any rate to the days of the Romans, and its fine Castle—the property of the Marquess of Bute—was founded early in the Norman period. The city has the advantage of many fine open spaces and parks, in one of which, the Cathays Park, are located municipal, national, county and educational buildings, including the new University College buildings. The city and its neighbourhood furnish objects of interest and material for study in almost every branch of knowledge, particularly to the historian, the economist, the civil, mechanical and mining engineer, the metallurgist, the geographer and the geologist, having regard to its ancient history, industrial conditions, large works and collieries and geological formation.

The College was opened in October, 1883, and was incorporated by Royal Charter in 1884. The old Infirmary Buildings in Newport Road were rented from the Cardiff Infirmary Committee for the use of the College, and were afterwards purchased. At first, the Faculties of Arts and Science were instituted and, as facilities offered, other Faculties and Departments were established. The Medical School, to which is now attached a Department of Public Health, was opened in 1894, and the Engineering School in 1896. In 1896 the University of Wales was founded, and since then the courses in Arts and Science of the College, as one of the three constituent Colleges of the University, have been primarily intended to be qualifying courses for the Degrees of the University in those Faculties.

The foundation stone of the new buildings in Cathays Park was laid by the Prince of Wales, the Chancellor of the University, in 1905. These new buildings, containing the Administrative and Arts blocks and the Drapers' Company's Library (containing about 43,000 volumes) were opened in 1909. In 1912 H.M. King George opened the Viriamu Jones Memorial Physical Research Laboratory, which had been erected on the same site. In the year 1913 Sir William James Thomas undertook to provide for the College the whole of the buildings required for the Department of Physiology, and subsequently, in 1914, he undertook to provide for the College a Public Health Department and School of Preventive Medicine, and also the necessary buildings for a complete Medical School, the total cost being about £100,000. The new Physiological Buildings in Newport Road are practically complete. As soon as the buildings of the complete Medical School have been erected, students, instead of pursuing three years of their course at Cardiff and completing it elsewhere, will be enabled to pursue the whole course at Cardiff.

In the Departments of Science and Medicine there are the usual laboratories, and also the Alfred Hughes Anatomical Museum, and the museums of Zoology, Materia Medica and Pathology. The National Museum of Wales is located in Cardiff on a site in Cathays Park adjacent to the College buildings. Students have ready access to its large collections.

Faculties.—The Faculties and Departments of the College are:—(i) Faculty of Arts, (ii) Faculty of Science, (iii) Faculty of Medicine, (iv) Department of Applied Science and Technology, (v) Department of Music, (vi) Elementary Training Departments for Men and Women, (vii) Secondary

Training Departments for Men and Women. Provision is also made for courses of instruction in Agriculture and Dairying Science and in Law (for articled clerks), and courses of University Extension Lectures are arranged.

Degrees and Diplomas.—The Degrees of the University of Wales are granted to students (men and women) of the College after completion of a qualifying scheme of study extending over at least three years; the scheme in Medicine occupying six years. The College also grants diplomas in Engineering, Mining other than Coal Mining), and Metallurgy; in Welsh Language and Literature and Welsh History; in Economics and allied subjects; and in Music. In the Applied Science subjects the qualifying scheme of study extends over three years; in the other subjects over two years. A joint diploma in Coal Mining is granted by the College and the South Wales and Monmouthshire School of Mines, four years' residence being required.

Facilities for Research.—As the result of the Royal Commission on University Education in Wales great developments will undoubtedly take place in the College in the near future, particularly in regard to Technological education and research in special relation to the industries of the South Wales coalfield. The complete Medical School which will eventually be provided will furnish unequalled opportunities for Medical education and research. Provision has already been made for the establishment of a full-time Professorship of Preventive Medicine. It is also intended to erect large and commodious Science laboratories immediately after the war, in which there will be ample provision, not only for the usual undergraduate work, but for postgraduate and research work. Provision is made for research in practically all subjects of study, and aid is given by means of College Scholarships and University postgraduate Studentships and Fellowships.

Scholarships.—A number of Entrance Scholarships are offered for competition annually at an examination held in April, varying in value from £70 to Scholarships covering tuition fees. Most of these are open Scholarships.

Fees.—Registration fee, 1 guinea per session. The composition fees for tuition per session are as follows:—Arts, £12; Science, £16; Music, Diploma or Degree Course, £12; Applied Science, £24; Education Department, Secondary Training, £12; Medical courses, from £30 to £21. Research Students: 8 gs., but 5 gs. if not using laboratories.

The average total cost of degree courses (including Examination fees) may be taken to be as follows:—Arts and Music, £47; Science and Applied Science and Technology, £58; Medicine (for 3 years at Cardiff and 2 years elsewhere), £140 to £170.

Residence.—For Women: The Aberdare Hall, where the sessional fee for board and residence is from £34 to £43 10s. Board and lodgings in Cardiff can be obtained by men students on reasonable terms, say, from £1 5s. to £1 10s. per week. A list of registered lodging-houses is kept in the College Registry.

Recreation and Athletics.—There is a Students' Representative Council, which organises and manages the various societies in connection with the corporate life of the students. Within reasonable distance of the College there is a sports' field of about 3 acres, and there are tennis courts and croquet lawns in the College grounds at Cathays Park.

Number of Professors and other Teachers in Departments recognised by the University—57.

Number of Day Students.—Degree, Diploma, and Postgraduate, 553; others, 23. Of these, 169 were women. Occasional students, 264.

Official Publications.—The Calendar, 2s.; Prospectuses of the various Faculties and Departments.

Acting Principal:—Prof. A. H. Trow, D.Sc.

Registrar (to whom all inquiries should be addressed) :—D. J. A. Brown.

Foreign Correspondent :—Prof. W. J. Roberts, Y Fedw Arian, Llanishen, Glam.

Royal Albert Memorial College, Exeter.

Exeter is an ancient fortified town and cathedral city, situate on red sandstone in a beautiful country, with a mild and genial climate. Good railway centre.

In 1893 the Museum, founded as a memorial of the late Prince Consort, was amalgamated with the Technical Institute, Art School, and Art Gallery, and with the system of University Extension lectures promoted by the University of Cambridge. In 1901 the College thus formed was placed on the complete footing of a University College.

Affiliated to the Universities of Oxford and Cambridge; recognised by the Special Board for Medicine of the University of Cambridge and the Conjoint Board of the Royal College of Physicians and Royal College of Surgeons as a place of instruction in Chemistry, Physics, Biology, &c.

Additional buildings, laboratories, class-rooms, &c., were opened in 1911. The library comprises about 70,000 books.

Departments.—1. University Classes, preparing for the Arts and Science degrees of the University of London and for other advanced examinations; 2. Education, preparing students for diplomas of Secondary Teachers of the Universities of Cambridge and London, and for the training of students as Teachers in Elementary Schools; 3. Junior Engineering and Technical School (1902); 4. School of Art; 5. Evening Classes in Literature, Science, Technology, and Commercial subjects.

Facilities for Research.—The Museum, Library, and surroundings offer many opportunities for research in Archæology, Botany, Geology, and Natural History.

Scholarships.—About £120 annually awarded in open Scholarships; £280 annually awarded to students in residence.

Fees.—Tuition for degree and diploma examinations of the University of London, 10 to 18 gs. per session; Cambridge and Conjoint Medical Board Preliminary Science and First Professional Examination (Medical or Dental), 15 gs.; Foreign students, £3 first term, and £2 a term thereafter for special course in English, Education, &c. Egyptian students in training, £20. Special fees for research work.

Halls of Residence.—For women : the College Hostel (undenominational), Castle Street (Warden), and the Diocesan Church College Hostel, 25, St. David's Hill (Lady Superintendent). Board and residence in these Hostels, 18s. to £1 a week.

There are excellent playing fields, and numerous College societies hold frequent meetings.

Number of Professors and other Teachers—22.

Number of Students—Degree and diploma, 50. Total day, 318 (141 women); evening, 462 (133 women).

Official Publication.—The Calendar, August, free.

Principal :—A. W. Clayden, M.A.

Registrar and Secretary (to whom inquiries should be addressed) :—A. Woodbridge.

University College, Nottingham.

The College was opened in 1881. An application for a Charter transforming the College into the University of the East Midlands is shortly to be laid

before the Privy Council. The buildings are situate in the centre of the city, but are well removed from the manufacturing district.

The city (pop. 300,000) is noted for its cleanliness and healthiness. It contains fine public grounds, and is within easy reach of the Dukeries and other places of interest. Students can reach cricket, football, tennis and golf grounds by a few minutes' tram ride. Nottingham is the chief centre in Britain for the manufacture of lace. Other important industries are engineering, leather and hosiery.

The Free Public Library and Natural History Museum are at present housed in the same building as the College; but the City authorities have undertaken to provide other accommodation for them and to place the whole of the buildings at the disposal of the Governors of the College for educational purposes.

Courses preparing for degrees of the University of London in Arts, Economics, Divinity, Pure Science, Medicine, Agriculture, Engineering and Mining; Diploma courses: for the Associateship of the College in Commerce, Geography, Engineering, Mining, Mine Surveying and diploma (women) in Secretarial Work (each 3 years); for the Board of Education Elementary Teachers' Certificates and the University of Cambridge Secondary Teachers' Diploma, for the Law Society's Examinations, L.D.S., Associateship of the Institute of Chemistry, and Colliery Manager's Certificate; course for Civil Service Appointments; Diploma of Public Health course; Diploma (women) in Dispensing (Apothecaries' Hall); Postgraduate and Research courses.

Scholarships.—Entrance Scholarships of the annual value of from £20 to £30 are awarded annually upon the result of an examination held in June. Research Scholarships in Arts and Science of the value of from £50 to £60 are awarded annually in December. Special facilities are provided for research in all subjects, and research students have the privilege of working under the direct supervision of Professors and Heads of Departments.

Fees.—(*a*) Tuition composition fees: I. Degree courses. Arts—Intermediate or B.A. Pass or Hons., 4 gs. a term, or with laboratory, 5 gs., M.A. or other postgraduate course, £5 a session; Divinity—Intermediate, 4 gs. a term; Science—Intermediate (also in Agriculture), and Final B.Sc. Pass or Hons. £6 a term; Research, £4 a term or £10 a session; Medicine, for first or second Medical, £6 a term; Applied Science—Engineering, £6 a term for first 3 terms, and 2 gs. for Summer term; Mining or Mine Surveying, £6 a term. II. Diploma courses. Commerce, 3 gs. a term; Geography, £6 a term; Engineering, as for degree course; Mining Engineering, £6 a term; Mine Surveying, £6 a term; L.D.S., 4 gs. a term or £10 a session; D.P.H., £10, A.I.C., £6 a term, including laboratory; Dispensing, £3 a term. III. Certificate courses. Colliery Manager's, 2 gs. a session. IV. Law course, 10*s.* to £2 a term. All the above fees are for day classes. (*b*) Examination fees: Local fees (in addition to the University fee), Intermediate, 1 guinea; Final, 30*s.*

Halls of Residence.—For men, Mapperley Hall, primarily for Elementary Training students (Principal). Registered lodgings are also provided for men students at an inclusive cost of from 20*s.* to 30*s.* per week. For women, Hylton House, primarily for Elementary Training students (Warden); Hollygirt (Principal), inclusive cost from 17*s.* 6*d.* per week.

Number of Professors and other Teachers—66.

Number of Students.—Degree and Diploma, 250 (114 women); occasional, 54; evening: 1,590; postgraduate and research, 23.

Official Publications.—The Calendar, September, 1*s.*; Prospectus, July, free.

Principal:—W. H. Heaton, M.A.

Vice-Principal:—F. S. Granger, M.A., D.Lit. (to whom inquiries should be addressed).

Acting Registrar:—J. E. Shimeld.

University College, Reading.

Reading, which is situate on the Kennet at its junction with the Thames, is an ancient borough, with remains of the magnificent abbey founded by King Henry I., who was buried here. It is a leading agricultural centre, an important railway centre, and noted for seeds and biscuits. It contains a public library, and a museum with one of the finest collections of Roman antiquities (Silchester) in the Kingdom. The town is within easy reach of Oxford and London.

The College was founded as a University Extension College in conjunction with the Schools of Science and Art, Reading, in 1892, and was recognised as a University College in 1902.

The College possesses an endowment of £250,000, most of which was given to it in 1911 with the object of enabling it to procure a charter as an independent University. Preparations with this object in view are temporarily suspended in consequence of the war.

A distinguishing feature of the College is the large provision of residential halls. There are 5 of these, 2 for men and 3 for women, providing accommodation for nearly 350 students.

Buildings.—An Assembly Hall, lecture and class rooms, Library (containing 15,000 vols.), Laboratories (Physics, Chemistry, Botany, Zoology, Geology and Geography), Art Studios, School of Music, Domestic Subjects department, Gymnasium, Sanatorium, and Common Rooms. The College owns a farm of 140 acres and a garden of 4 acres for training in Agriculture and Horticulture.

Faculties.—Letters; Science; Agriculture and Horticulture. *Departments.*—Fine Arts; Music; Commerce and Technical Subjects.

The College is recognised by the Board of Education as a Training College for Teachers for Elementary and Secondary Schools, and by the University of Cambridge Teachers' Training Syndicate as a Training College, by the Royal Colleges of Physicians and Surgeons (in Natural Science) and by the Surveyors' Institution. The National Institute for Research in Dairying is associated with the Faculty of Agriculture and Horticulture, and the British Dairy Institute is situate on the College site.

Courses of study are provided for the University of London Intermediate Arts, B.A. (Pass and Honours), M.A., Intermediate Science, B Sc. (Pass and Honours), First Examination and Part I. of the Second Examination for Medical Degrees, Intermediate Science (Agriculture), B.Sc. (Agriculture), Intermediate Science (Horticulture) and B.Sc. (Horticulture) examinations; also for College Diplomas of Associateship in Letters, Agriculture, Dairying, Horticulture, Commerce, and Domestic Subjects (each 2 years) and Fine Art and Music (each 3 years) and Certificates in Agriculture (6 months), Dairying, Horticulture, Crafts, Commerce, Secretarial Subjects and Domestic Subjects (each 1 year).

Scholarships.—Scholarships open to students from overseas are offered in Arts, Science, Agriculture, Fine Art and Music.

Facilities for Research.—These are provided in all Faculties. There are Research Fellowships (£125 per annum) and Honorary Research Fellowships.

Tuition Fees for the Principal Courses.—London Degree in Arts, £20 per annum; Degrees in Science (including Agriculture and Horticulture) and First Examination for Medical Degrees, £24 per annum; College Diplomas in Letters and Commerce, £20 per annum; Diplomas in Agriculture, Horticulture, and Domestic Subjects, £24 per annum; Diploma in Dairying, £24 for first year, £30 for second year; Diploma in Fine Art, £14 per annum; Diploma in Music, about £26 per annum; Certificate in Agriculture (two terms), £16; Certificates (each one year) in Dairying, £30; in Horticulture, £24; in Crafts, £14; in Commerce, £20; in Secretarial Subjects, £20. *Examination fees* for diplomas in Agriculture, Dairying, Horticulture, Commerce, and Domestic Subjects, 1 guinea for each year; in Fine Art, 1 guinea; in Music,

3 guineas; for Certificates in Agriculture, Horticulture, Crafts, Commerce, Secretarial Subjects, and Domestic Subjects, 1 guinea each; in Dairying, £1 11s. *Fee for Admission to Associateship*, 10s. 6d.

Halls of Residence.—Wantage Hall and St. Patrick's Hall, for men. Cintra Lodge, for men (Warden), £49 or £54 per session of 30 weeks. St. Andrew's Hall (Warden); Wessex Hall (Warden); St. George's Hostel (Warden), for women, £38 to £48 per session. Sanatorium fee, £1 1s. per session.

Recreation and Athletics.—There is an athletic ground of 12 acres. There are facilities for rowing on the Thames. College societies include a Students' Union and Representative Council, and Societies for Literature and History, Debate, Modern Languages, Science, Art, and Music. There are Students' common rooms, and a buttery (or restaurant) for students and others.

Number of Professors and other Teachers.—62, and 26 assistants and instructors.

Number of Students.—Full-time, 394; part-time, 161; evening, 529; post-graduate and research, 12.

Official Publications.—The Calendar, September 1s. 4d.; Prospectuses, free; Diploma Examination Papers in Agriculture, Horticulture, and Dairying, 3d.; U.C. Review, three times a year, 2s. per annum.

Principal :—W. M. Childs, M.A.

Registrar (to whom inquiries as to fees should be addressed) :—F. H. Wright, M.A.

Tutorial Secretary (to whom inquiries as to courses of study and arrangements for residence should be addressed) :—H. Knapman, M.A.

University College, Southampton.

The town of Southampton is one of the most ancient in Britain. Situate on an estuary which leads to the Solent and the English Channel, it has from Roman times been the chief port on the South Coast for communication with the Continent of Europe. Through the Water Gate in its walls, still admirably preserved, English soldiers embarked for the fields of Creçy and Poitiers, and Agincourt. The scenery of this part of Hampshire is very attractive, the climate exceptionally mild. The New Forest and other wild tracts of country, and Southampton Water and the Solent, afford many opportunities to the naturalist. Winchester and Salisbury Cathedrals, the Abbeys of Romsey, Beaulieu and Netley and many other buildings of great historical and artistic interest are within very easy reach.

Students prepare for the degrees in Arts and Science, including Economics and Engineering, of the University of London. They are also trained for teaching in both Elementary and Secondary Schools. The laboratories for Biology, Chemistry, Physics, and Engineering (Civil, Mechanical, and Electrical) are well-equipped for research.

Fees.—The composition fee for the session is £20, with an additional £4 for subjects involving laboratory work.

Halls of Residence.—Highfield Hall (Warden) for men, standing in large grounds on the edge of the Common on the high ground above the town, £45 per session. University Hall (Warden) for women, £34 per session.

Number of Professors and Lecturers—33.

Number of Students—Day, 191; evening, 650.

Official Publication.—The Handbook, post free on application.

Principal :—Alex Hill, M.A., M.D., F.R.C.S.

Registrar :—D. Kiddle.

Printed under the authority of His Majesty's Stationery Office
By Eyre and Spottiswoode, Ltd., East Harding Street, E.C. 4,
Printers to the King's most Excellent Majesty.

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